



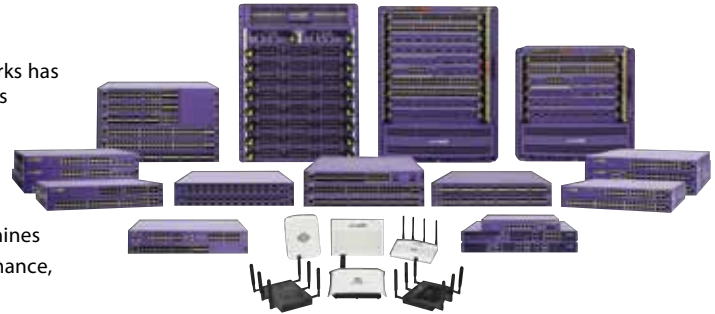
## What Solutions Does Extreme Networks Provide?

Ethernet Switches for Campus/Enterprise, Cloud, Data Center, High Performance Computing, BYOD, IXP, SDN, and Storage applications

- Wireless switches and access points • Integrated security solutions
- IT infrastructure monitoring
- Professional network services

Since our founding 15 years and 30 million ports ago, Extreme Networks has led the market in networking innovations. Our vision and technologies deliver all-inclusive solutions that span the converged edge to the enterprise core and beyond. We accomplish this through:

- Best-in-class Ethernet technologies
- Powerful end-point awareness that optimizes the Quality of User Experience by recognizing users, their devices and virtual machines
- Quality of User Experience is coupled with unequalled price/ performance, sustainability, multi-vendor interoperability, and customer intimacy.
- ExtremeXOS®, an end-to-end modular, extensible, and always-on operating system that adds intelligence to the network and guarantees predictability from the edge to the cloud.
- Lowest Total Cost of Ownership delivered by higher port density, reduced power consumption, and a single unified operating system.



Whether the network supports your business or delivers applications and services to your customers, **Extreme offers network planners the tools to build more powerful, flexible and cost-effective infrastructures.**

For end users, this means a consistent, intuitive experience and the productivity, efficiency and satisfaction that come along with it. For CIOs, this means a platform to optimize and personalize each network connection from access edge to virtual server, and offer predictable experiences. For the COO or Operations team at a hosting provider, this creates a platform to offer more competitive, feature-rich and valuable services. And for mobile operators, it establishes an environment through which to offer differentiated and personalized services.

## Extreme Networks Awards & Recognition

### Tech Innovator of the Year: BlackDiamond® X8

Chosen by the CRN editorial staff based on technical merit and other factors, the scalability, performance, low latency and best in class density and power consumption all contributed to the BlackDiamond X8 winning CRN's Tech Innovator of the Year Award for 2012.



### Data Centre Product of the Year: BlackDiamond X8

Readers of Network Computing, an industry publication based in the UK, voted the Extreme Networks BlackDiamond X8 "Data Centre Product of the Year." The performance, scalability, low power consumption and ability to handle cloud and heavily virtualized environments all contributed to the BlackDiamond X8 being selected.



### Best 40G core switching platform BlackDiamond X8

Extreme Networks BlackDiamond X8 series switches are tailor-made for high-performance computing environments, data centers and cloud computing environments. With its outstanding performance and user-friendly interfaces, BlackDiamond X8 offers powerful core-switching capacity and unlimited scalability to support heavily loaded multi-tasking environments for parallel programs. BlackDiamond X8 provides high performance, high scalability, low latency, low power consumption and many other advantages.



Extreme Networks' focus is 100% networking, including converged wired, wireless and secure networking.

## Industry-Leading Channel Partner Program

### Overview

The Extreme Networks Channel Partner program is built on value, Innovation, and Commitment - as well as tools that can potentially help you build business and increase revenues.

### Program Levels:

The multi-tiered partner program allows you to determine where your organization best fits. Each level enables you to develop new opportunities and increase your value-add by offering best-of-breed solutions to your customers.

### Benefits:

Extreme Networks sets the stage for success with training, sales and marketing tools, superior service and support, and incentives to promote success.

- Incentives for Success – Training to Build Expertise
- Service Options – Tools and Resources

### Requirements:

The multi-tiered model makes it easy for you to participate in the program level that is most appropriate and provides the best return based on your value proposition.

- Sales Revenue – Training Certification Requirements – Service Options

### Partner Training & Certification:

Training increases your competitive advantage through the latest sales strategies, advances in networking technologies, and solutions from Extreme Networks.

- Extreme Networks Certified Sales Professional (ECSP) – Extreme Networks Certified Design Professional (ECDP) – Post-Sales Technical Training



Contact a Jenne sales representative for complete details and requirements for programs and discounts. Specifications subject to change without notice.

## BLACK DIAMOND PRODUCT COMPARISON CHART

Features	BlackDiamond® X8**	BlackDiamond 8810	BlackDiamond 8806
Max Auto-Negotiating 10/100/1000BASE-T Ports	N/A	784	400
Max Gigabit Ethernet Ports (GBIC or SFP)	384	440	248
Max 10 Gigabit Ethernet Ports	768	194	98
Max 40 Gigabit Ethernet Ports	192	48	24
Form Factor/Footprint	Chassis/14.5RU	Chassis/14RU	Chassis/10RU
Total Switching Capacity	20.48 Tbps	1.28 Tbps	1.28 Tbps
Redundant Power	Yes	Yes	Yes
Power over Ethernet	No	802.3af	802.3af
Wire-Speed Layer 2/Layer 3 Switching	Yes	Yes	Yes
Routing - IPv4	BGP4, IS-IS, OSPF, RIP v1/v2, PIM, MSDP	BGP4, IS-IS, OSPF, RIP v1/v2, PIM, MSDP	BGP4, IS-IS, OSPF, RIP v1/v2, PIM, MSDP
Routing - IPv6	RIPng, OSPFv3, IS-IS	RIPng, OSPFv3, IS-IS	RIPng, OSPFv3, IS-IS
MPLS/H-VPLS	Optional Feature Pack	Optional Feature Pack (with selected modules)	Optional Feature Pack (with selected modules)
Direct Attach™	Optional Feature Pack	Optional Feature Pack	Optional Feature Pack
Policy-Based Routing/Switching	Yes	Yes	Yes
Policy-Based Quality of Service (QoS)	Yes	Yes	Yes
Network Login	Yes	Yes	Yes
Identity Manager	Yes	Yes	Yes
Access Control Lists	Yes, Ingress and Egress	Yes, Ingress and Egress	Yes, Ingress and Egress
Universal Port	Yes	Yes	Yes
CLI Scripting	Yes	Yes	Yes
Widgets	Yes	Yes	Yes
Layer 3 Virtual Switching	Yes	Yes	Yes
vMANs (802.1ad)	Yes	Yes	Yes
CLEAR-Flow	Yes	Yes	Yes
sFlow®	Yes	Yes	Yes
IPFIX	Yes	Yes	Yes
EAPS	Yes	Yes	Yes
Advanced Spanning Tree (802.1w, 802.1s, PVST+)	Yes	Yes	Yes
LAG/M-LAG	LAG/M-LAG	LAG/M-LAG	LAG/M-LAG
Switch Management Capabilities	SNMP, XML, Web, CLI, 4 RMON groups	SNMP, XML, Web, CLI, 4 RMON groups	SNMP, XML, Web, CLI, 4 RMON groups
License - Upgrades	Core, MPLS, Direct Attach	Core, MPLS, Direct Attach	Core, MPLS, Direct Attach
License - Default	Advanced Edge	Advanced Edge	Advanced Edge

## BlackDiamond Family

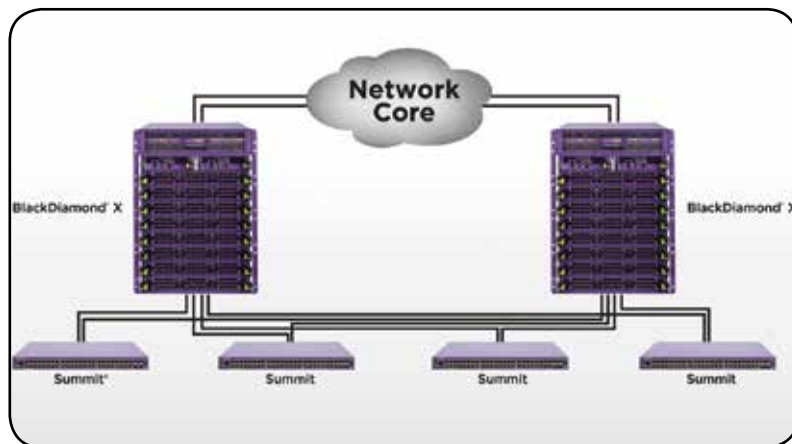
The exacting demands of IP Telephony deployments, enterprise aggregation, corporate data centers and network backbones, and metro Ethernet provider Points of Presence require solutions that combine consistent performance, carrier-class availability, enhanced security and simplified management. BlackDiamond products from Extreme Networks® are designed and purpose-built to deliver these mission-critical capabilities.

These switches minimize latency and jitter, which degrade the quality of voice and video applications. They're also highly resilient, a key aspect of voice-class availability using technologies such as Ethernet Automatic Protection Switching (EAPS) link resiliency standard to provide sub-50-millisecond link failover recovery time. Our multi-layered approach to security helps safeguard your network and leverages best-of-breed appliances and partners, so you can implement the security architecture that's best for you. Our products share the same user interface and management framework, providing end-to-end simplicity, which is even more critical now, with a single, converged network that carries all of an organization's voice, video and data traffic.

## BlackDiamond® X Series\*

BlackDiamond X series switches simplify enterprise and cloud data center networks with the highest throughput performance in the industry.

- Industry's highest-density 40 GbE and 10 GbE switch for enterprise core and cloud-based data centers
- 192 wire speed 40 Gigabit Ethernet or 768 10 Gigabit Ethernet ports in one third of a rack, 576 40 Gigabit Ethernet or 2,304 10 Gigabit Ethernet ports per rack
- More than 20 terabit switching capacity with bidirectional 1.28 terabit per second switching bandwidth per slot with N+1 lossless switching fabric design
- Lowest power consumption at 5 watts per 10 Gigabit Ethernet with pure front-to-back data center optimized cooling and high efficiency, digital power supplies



BlackDiamond X Series

## BlackDiamond® 8K Series

For small to large enterprise network edge/aggregation/core, metro service providers and data centers.

- High-density gigabit or 10 Gigabit Ethernet (GbE) switch for aggregation/core, high-performance cluster computing (HPCC) and data center deployments
- Supports MPLS/H-VPLS and highly scalable Layer 2 and Layer 3 switching with up to 512k MAC addresses or up to 512k IPv4 routes
- Scales from 24G per slot to 128G per slot switching bandwidth. Architecturally ready for 40G interfaces
- Cost-effective edge switch for the wiring closet with high-density PoE support for campus enterprises





## SUMMIT® SERIES COMPARISON CHART

Features	Summit X670V*	Summit X650	Summit X480	Summit X460	Summit X450a	Summit X450e	Summit X440	Summit X250e 24 (SFP available) or 48	Summit X350	Summit X150
Max Auto-Negotiating 10/100BASE-TX Ports	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24	N/A	24 or 48
Max Auto-Negotiating 10/100/1000BASE-T Ports	N/A	N/A	12 or 48	24 or 48	24 or 48	24 or 48 (PoE & non-PoE)	12, 24, or 48	2	24 or 48	2
Max Gigabit Ethernet Ports (GBIC or SFP)	48	4	4, 24, or 48	8, 24, or 48	4	4	12, 24, or 48	2	4	2
Max 10 Gigabit Ethernet Ports	48 (default), 64 (with VIM4-40G4X)	24 (default), 32 (with VIM1-10G8X)	2, 4, or 6	2	2	2	1	N/A	2	N/A
Max 40 Gigabit Ethernet Ports	4	4	/	/	/	/	/	/	/	/
Form Factor/Footprint	Fixed/1RU	Fixed/1RU	Fixed/1RU	Fixed/1RU	Fixed/1RU	Fixed/1RU	Fixed/1RU	Fixed/1RU	Fixed/1RU	Fixed/1RU
Stacking Support	Yes, SummitStack-V (with VIM4-40G4X)	Yes, SummitStack™, SummitStack256, SummitStack512, SummitStack-V, SummitStack-V160	Yes, SummitStack, SummitStack-V, SummitStack-V80	Yes, SummitStack, SummitStack-V, SummitStack-V80	Yes, SummitStack, SummitStack-V	Yes, SummitStack, SummitStack-V	Yes, SummitStack	Yes, SummitStack	No	No
Total Switching Capacity	1.28Tbps	960Gbps	224-448 Gbps	176-328 Gbps	128-256 Gbps	128-256 Gbps	40 Gbps	48.8-97.6 Gbps	88-176 Gbps	8.8-13.6 Gbps
Sync-E	No	No	No	Yes	No	No	No	No	No	No
Redundant Power	Yes/Hot Swappable	Yes/Hot Swappable	Yes/Hot Swappable	Yes/Hot Swappable	Yes/External	Yes/External	Yes/External	Yes/External	Yes/External	Yes/External
Power over Ethernet	No	No	No	802.3at PoE Plus	No	802.3af	802.3af	802.3af	No	Summit X150-24p (802.3af)
Wire-Speed Layer 2/ Layer 3 Switching	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Layer 2	Layer 2
Routing - IPv4	BGP4, IS-IS, OSPF, RIP v1/v2, PIM, MSDP	BGP4, IS-IS, OSPF, RIP v1/v2, PIM, MSDP	BGP4, IS-IS, OSPF, RIP v1/v2, PIM, MSDP	BGP4, IS-IS, OSPF, RIP v1/v2, PIM, MSDP	OSPF, RIP v1/v2, PIM, MSDP	OSPF, RIP v1/v2, PIM, MSDP	OSPF, RIP v1/v2, PIM	OSPF, RIP v1/v2, PIM	No	No
Routing - IPv6	RIPng, OSPFv3, IS-IS	RIPng, OSPFv3, IS-IS	RIPng, OSPFv3, IS-IS	RIPng, OSPFv3, IS-IS	RIPng, OSPFv3	RIPng, OSPFv3	RIPng, OSPFv3	RIPng, OSPFv3	No	No
MPLS/H-VPLS	Optional Feature Pack	No	Optional Feature Pack	Optional Feature Pack	No	No	No	No	No	No
Direct Attach™	Optional Feature Pack	No	Optional Feature Pack	Optional Feature Pack	Optional Feature Pack	No	No	No	No	No
Policy-Based Routing/Switching	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes/Policy-Based Switching	Yes/Policy-Based Switching
Policy-Based Quality of Service (QoS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Network Login	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Access Control Lists	Yes, Ingress and Egress	Yes, Ingress and Egress	Yes, Ingress and Egress	Yes, Ingress and Egress	Yes, Ingress	Yes, Ingress	Yes, Ingress	Yes, Ingress	Yes, Ingress	Yes, Ingress
Identity Manager	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Universal Port	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
CLI Scripting	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Widgets	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Layer 3 Virtual Switching	Yes	Yes	Yes	Yes	No	No	No	No	N/A	N/A
vMANS (802.1ad)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CLEAR-Flow	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
sFlow	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IPFIX	Yes	No	Yes	Yes	No	No	No	No	No	No
EDPS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advanced Spanning Tree (802.1w, 802.1s, PVST+)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAG/M-LAG	LAG/M-LAG	LAG/M-LAG	LAG/M-LAG	LAG/M-LAG	LAG/M-LAG	LAG/M-LAG	LAG/M-LAG	LAG/M-LAG	LAG	LAG
Switch Management Capabilities	SNMP, XML, Web, CLI, 4 RMON groups	SNMP, XML, Web, CLI, 4 RMON groups	SNMP, XML, Web, CLI, 4 RMON groups	SNMP, XML, Web, CLI, 4 RMON groups	SNMP, XML, Web, CLI, 4 RMON groups	SNMP, XML, Web, CLI, 4 RMON groups	SNMP, XML, Web, CLI, 4 RMON groups	SNMP, XML, Web, CLI, 4 RMON groups	SNMP, XML, Web, CLI, 4 RMON groups	SNMP, XML, Web, CLI, 4 RMON groups
License - Upgrades	Core, MPLS, Direct Attach	Core, Direct Attach	Core, MPLS, Direct Attach	Advanced Edge, Core, MPLS, Direct Attach	Core, MPLS, Direct Attach	Core, MPLS, Direct Attach	Advanced Edge	Advanced Edge	N/A	N/A
License - Default	Advanced Edge	Advanced Edge	Advanced Edge	Edge	Edge	Edge	Edge	Edge	Layer 2 Edge	Layer 2 Edge



## Summit Family

Extreme Networks® offers a number of switches for aggregation and edge applications, many of which are capable of stacking with SummitStack™ technology. There are several options available to meet the demanding requirements of your network.

Within the range of the Summit product line, we offer switches designed to support the evolving applications of a converged network with exceptional Quality of Service, low latency, resiliency, line rate performance and Power over Ethernet (PoE). Summit switches offer various critical capabilities, from Top-of-Rack server aggregation switch, processing packets between core and edge switches, providing high availability, control and simplified management of your entire network with ExtremeXOS®, to providing high density gigabit PoE to the desktop in a network running ExtremeXOS from the core to the edge, including 10/100 Layer 2/Layer 3 intelligent switching for advanced IP services. Summit switches are designed to meet the performance and availability requirements of today's high-performance converged networks.

### Summit X670 Series



The Summit X670 series are high-density, low latency 10 Gigabit Ethernet stackable switches with optional 40 GbE uplinks, for data center, and enterprise

core and aggregation deployments.

### Summit X650 Series



The ultimate Top of Rack switch for server virtualization and 10 gigabit aggregation with the revolutionary modular operating system, ExtremeXOS.

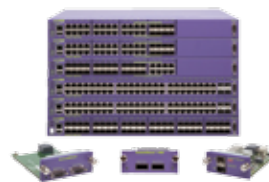
### Summit X480 Series



The Summit X480 series switch is a versatile, high-end Ethernet switch for data center, enterprise aggregation, and Carrier Ethernet deployments. Summit X480 helps optimize application

performance for a variety of network deployments with its rich features and high scalability.

### Summit X460 Series



The Summit X460 series switch is a highly flexible and scalable Gigabit Ethernet switch for data center, enterprise aggregation, and Carrier Ethernet deployments. It supports PoE-plus for campus edges, virtualization, cross-rack stacking with longer reach stacking for data centers, and PB and

MPLS/H-VPLS for Carrier Ethernet networks.

### Summit X450a Series



A highly flexible and scalable Summit X450a is an ideal aggregation switch for traditional small core enterprise networks and an excellent first level

aggregation device for DSLAMs at a local central office.

### Summit X450e Series



Summit X450e provides a high bandwidth, non-blocking architecture with tri-speed copper Gigabit Ethernet ports in PoE and non-PoE versions.

Summit X450e supports SummitStack high-speed stacking for demanding edge applications.

### Summit X440 Series



Summit X440 series switches extend the intelligence and resiliency of the ExtremeXOS network operating system to the converged access edge, enabling fine grained Quality of Service (QoS), stacking, high availability features and identity aware security in a compact, cost effective switch.

### Summit X350 Series



Summit X350 series switch is a standalone tri-speed copper port Gigabit Ethernet value edge switch with ExtremeXOS modular operating system

at an affordable price.

### Summit X250e Series



Summit X250e provides advanced features with copper 10/100BASE-T with and without Power over Ethernet (PoE) or fiber 100BASE-X SFP Fast Ethernet

ports. Summit X250e supports SummitStack high-speed stacking for demanding edge applications at an affordable price.

### Summit X150 Series



Summit X150 series switch is a standalone Fast Ethernet value edge switch with ExtremeXOS modular operating system at an affordable price.

## Limited Lifetime Warranty eAHR

Extreme Networks new Limited Lifetime Warranty eAHR (express Advanced Hardware Replacement) program is being offered across Summit value edge and advanced edge switches. This new program with enhanced hardware and software warranty including technical support coverage reflects Extreme Networks commitment to our customers to lower the Total Cost of Ownership.

• <b>Hardware</b>	Express Advanced Hardware Replacement: Next Business Day Shipment*
• <b>Software</b>	Lifetime Software Warranty*
• <b>TAC</b>	Technical Support via email, web form or telephone from 8 a.m. to 5 p.m. (Monday to Friday)*
• <b>Term</b>	Product End-of-Support date*
• <b>Entitlement</b>	Original Purchaser/end user

\*Contact a Jenne sales representative to find out more details. (800) 422 6191.



# SUMMIT® X670 SERIES\* SWITCHES

## Summit X670 Series

### Summit X350 series 24 or 48-port 10/100/1000 Gigabit Ethernet stand-alone switches

- Up to 1.28Tbps switching performance with 48- or optional 64-port 10 Gigabit Ethernet and 4-port 40GbE (Summit X670V) all running at wire rate.
- High-performance SummitStack™-V or SummitStack-V160\* stacking support for virtualized chassis configuration supporting mix and match with Gigabit Ethernet switches
- Sub-one-microsecond low latency for Layer 2 switching and Layer 3 switching
- Green design with very low power consumption and high efficiency power supply
- SFP+10 GbE ports with support dual speed 10 Gigabit Ethernet and Gigabit Ethernet providing smooth migration from Gigabit Ethernet to 10 GbE
- Software configurable 40 GbE QSFP+ uplink ports for native 40 GbE as well as 4 x 10 GbE to provide compatibility with non 40 GbE capable systems
- Data Center Bridging support with Priority Flow Control (PFC), Enhanced Transmission Selection (ETS) and Data Center Bridging eXchange (DCBX)
- Scalable Virtual Machine (VM) deployments with Direct Attach™ (VEPA) for inter-VM switching and XNV™ (ExtremeXOS® Network Virtualization) for VM mobility
- Reversible air flow option to provide separation of cold and hot aisle in data center installation



Summit X670 Series Family



17101



17103



LR SFP+ Module



XGM2-2bt



XGM2-2sf



#### JENNE PART

#### NUMBER: Name

#### Description

17101	Summit X670V-48x-FB	48 10GBASE-X SFP+, one VIM4 slot (unpopulated) , ExtremeXOS Advanced Edge License, unpopulated dual PSU power slot
17103	Summit X670-48x-FB	48 10GBASE-X SFP+, ExtremeXOS Advanced Edge License, unpopulated dual PSU power slot

#### Software Options

17131	X670 Series Core License	ExtremeXOS Core License, Summit X670 Series
17133	X670 MPLS Feature Pack	ExtremeXOS MPLS Feature Pack for Summit X670 series switches
11011	Feature Pack	Direct Attach™ Feature Pack for Summit X450a/X460/X480, Summit X650 and BlackDiamond 8800 Series with ExtremeXOS 12.5.1 or Greater

#### VIM Module Options

17122	VIM1-10G8X	VIM4-40G4X, 4 40GBASE-X QSFP+ ports module for Summit X670V
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#### Power/Fan Options

#### One power supply module for X650 series switches (sold separately)

10917	Summit X670 AC	450W AC Power Supply module for Summit switches, Front-to-Back airflow
10918	Summit X670 DC	450W DC Power Supply module for Summit switches, Front-to-Back airflow
17111	Summit X670 Fan module	Fan module for Summit X670 series switches, Front-to-Back airflow, spare
17112*	Summit X670 Fan module	Fan module for Summit X670 series switches, Back-to-Front airflow, spare

#### Fiber Options

10051	SX SFP	1000BASE-SX SFP, LC Connector
10052	LX SFP	1000BASE-LX SFP, LC Connector
10053	ZX SFP	1000BASE-ZX SFP, Extra Long Distance SMF 70 km/21 dB Budget, LC Connector
10064	LX100 SFP	1000BASE-LX100 SFP, Extra Long Distance SMF 100 km/30dB Budget, LC connector
10065	10/100/1000BASE-T SFP	CAT 5 cable 100m, RJ-45 connector
10301	10GBASE-SR SFP+	850nm, LC Connector, transmission length of up to 300m on SMF
10302	10GBASE-LR SFP+	1310nm, LC Connector, transmission length of up to 10km on SMF
10309	10GBASE-ER SFP+	1550nm, LC Connector, transmission length of up to 40km on SMF
10303**	10 Gigabit Ethernet SFP+	1310nm, legacy MMF 220m link, LC connector
10304	10GBASE-CR SFP+ 1m	Pre-terminated twin-ax copper cable with link lengths of 1m
10305	10GBASE-CR SFP+ 3m	Pre-terminated twin-ax copper cable with link lengths of 3m
10306	10GBASE-CR SFP+ 5m	Pre-terminated twin-ax copper cable with link lengths of 5m
10307	10GBASE-CR SFP+ 10m	Pre-terminated twin-ax copper cable with link lengths of 10m
10311*	40 Gigabit Ethernet QSFP+ passive copper cable assembly, 0.5m length	
10312	40 Gigabit Ethernet QSFP+ passive copper cable assembly, 1m length	
10313*	40 Gigabit Ethernet QSFP+ passive copper cable assembly, 3m length	
10314*	40 Gigabit Ethernet QSFP+ active optical cable assembly, 5m length	
10315	40 Gigabit Ethernet QSFP+ active optical cable assembly, 10m length	
10316*	40 Gigabit Ethernet QSFP+ active optical cable assembly, 20m length	
10318	40 Gigabit Ethernet QSFP+ active optical cable assembly, 100m length	
10319	40 Gigabit Ethernet QSFP+ SR4 optical module, MPO connector, 100m link length	

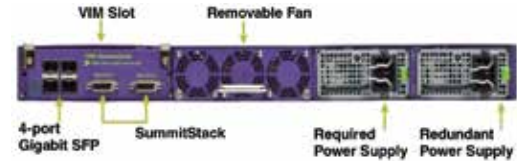
## Summit X650 Series

### 10 Gigabit Ethernet Stackable Switch with ExtremeXOS

- High-performance 10 gigabit aggregation or Core switch
- Interconnect switch providing low latency connections for High Performance Cluster Computing (HPCC)
- 24-port 10 Gigabit Ethernet non-blocking switching in 1 Rack Unit (RU) form factor
- 10 Gigabit Ethernet over UTP cable and SFP+ for fiber and passive copper direct host attach installation
- Dual Speed support on 10 Gig Ethernet and SFP+ ports providing smooth migration from Gigabit Ethernet to 10 Gigabit Ethernet
- ExtremeXOS modular OS for highly available network operation
- Carrier-grade redundant networking protocol including EAPS
- **Power supply not included.** Can take up to two power supplies in a redundant configuration. Minimum of one power supply is required for operation
- **Warranty:** 1-year Hardware, 90 days software (optional services available)



Summit X650 Series Family



X650 Back View

Comes with fan tray (shown with available options)



17001



17002



AC Power Supply



17012



LR SFP+ Module



10GBASE-CR SFP+



Stacking Cable

#### JENNE PART

##### NUMBER: Name

##### Description

<b>17001</b>	Summit X650-24t	24 10GBASE-T, VIM slot populated with 1 VIM-SummitStack (2 SummitStack stacking ports and 4 100/1000BASE-X SFP ports), ExtremeXOS Advanced Edge License, unpopulated dual PSU power slot
<b>17002</b>	Summit X650-24x	24 10GBASE-X SFP+, VIM slot populated with 1 VIM1-SummitStack (2 SummitStack stacking ports and 4 100/1000BASE-X SFP ports), ExtremeXOS Advanced Edge License, unpopulated dual PSU power slot

#### Software Options

<b>17010</b>	X650 Series Core License	ExtremeXOS Core License, Summit X650 series
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#### Power/Fan Options

#### One power supply module for X650 series switches (sold separately)

<b>10914</b>	Summit X650 AC PSU	AC Power Supply module for X650 series switches (not included)
<b>10915</b>	Summit X650 DC PSU1	DC Power Supply module for X650 series switches (not included)
<b>10916</b>	Summit X650 Fan module	Fan Module for X650 series switches, spare (included in 17001 or 17002)

#### VIM Module Options

<b>17012</b>	VIM1-10G8X	8 10GBASE-X SFP+ ports, 2 SummitStack stacking ports
<b>17013</b>	VIM1-SummitStack256	2 x 128G stacking ports and 4 100/1000BASE-X SFP ports
<b>17014</b>	VIM1-SummitStack512	4 x 128G stacking ports for 512 Gbps cross connecting two X650 switches

#### Fiber Options

<b>10051</b>	SX SFP	1000BASE-SX SFP, LC Connector
<b>10052</b>	LX SFP	1000BASE-LX SFP, LC Connector
<b>10053</b>	ZX SFP	1000BASE-ZX SFP, Extra Long Distance SMF 70 km/21 dB Budget, LC Connector
<b>10064</b>	LX100 SFP	1000BASE-LX100 SFP, Extra Long Distance SMF 100 km/30dB Budget, LC connector
<b>10065</b>	10/100/1000BASE-T SFP	CAT 5 cable 100m, RJ-45 connector
<b>10056</b>	1000BX SFP BX-D	1000BASE-BX-D SFP, SMF (1490 nm TX/1310 nm RX Wavelength)
<b>10057</b>	1000BX SFP BX-U	1000BASE-BX-U SFP, SMF (1310-nm TX/1490-nm RX Wavelength)
<b>10301</b>	10GBASE-SR SFP+	850nm, LC Connector, transmission length of up to 300m on SMF
<b>10302</b>	10GBASE-LR SFP+	1310nm, LC Connector, transmission length of up to 10km on SMF
<b>10304</b>	10GBASE-CR SFP+ 1m	Pre-terminated twin-ax copper cable with link lengths of 1m
<b>10305</b>	10GBASE-CR SFP+ 3m	Pre-terminated twin-ax copper cable with link lengths of 3m
<b>10306</b>	10GBASE-CR SFP+ 5m	Pre-terminated twin-ax copper cable with link lengths of 5m
<b>10307</b>	10GBASE-CR SFP+ 10m	Pre-terminated twin-ax copper cable with link lengths of 10m

#### Stacking Cable Options

<b>16106</b>	Stacking Cable, 20G, .5m	SummitStack/UniStack™ Stacking Cable, 0.5m
<b>16107</b>	Stacking Cable, 20G, 1.5m	SummitStack/UniStack Stacking Cable, 1.5m
<b>16108</b>	Stacking Cable, 20G, 3.0m	SummitStack/UniStack Stacking Cable, 3.0m
<b>16105</b>	Stacking Cable, 20G, 5.0m	SummitStack Stacking Cable, 5.0M (not supported for UniStack)
<b>17021</b>	Stacking Cable 128G, .5m	SummitStack256/512 Stacking Cable, 0.5m
<b>17022</b>	Stacking Cable 128G, 1.5m	SummitStack256/512 Stacking Cable, 1.0m
<b>17023</b>	Stacking Cable 128G, 3.0m	SummitStack256/512 Stacking Cable, 3.0m



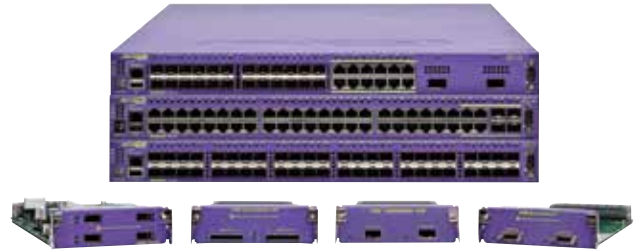


# SUMMIT® X480 SERIES STACKABLE SWITCHES

## Summit X480 Series

### Summit X480 Series Scalable Gigabit and 10 Gigabit Ethernet Stackable Switch with ExtremeXOS®

- 48-port Gigabit Ethernet or 24-port gigabit and 2-port 10 Gigabit Ethernet connectivity in 1RU form factor
- Optional 4-port 10 Gigabit Ethernet to provide 40 Gbps uplinks
- Optional 40 Gbps stacking for up to eight switches in a stack to provide up to 384 Gigabit Ethernet in one logically integrated unit
- Optional 128 Gbps stacking for up to eight switches in a stack to provide high-speed stacking
- Supports Layer 2 and Layer 3 switching, as well as MPLS/VPLS
- Up to 512k MAC address support for highly scalable Layer 2 networks
- Up to 512k IPv4 routes for highly scalable Layer 3 networks
- Up to 60k Access Control Lists (ACLs) for highly secure networks
- ExtremeXOS modular OS for highly available network operation
- Carrier-grade redundant networking protocol including Ethernet Automatic Protection Switching (EAPS)
- Internal redundant AC/DC power supply and field replaceable/ hot swappable fan tray



Summit X480 Series Family



16301



16303



16304



16311



16312



16313



16315



Stacking Cable

#### JENNE PART

#### NUMBER: Name

#### Description

<b>16301</b>	Summit X480-48T	48 10/100/1000BASE-T, 4 100/1000BASE-X unpopulated SFP (shared), No PSU with two unpopulated PSU slots, one VIM2 slot, ExtremeXOS Advanced Edge license
<b>16303</b>	Summit X480-24x	24 100/1000BASE-X unpopulated SFP, 12 10/100/1000BASE-T (shared), 2 unpopulated XFP ports, No PSU with two unpopulated PSU slots, one VIM2 slot, ExtremeXOS Advanced Edge license
<b>16304</b>	Summit X480-48x	48 100/1000BASE-X unpopulated SFP, No PSU with two unpopulated PSU slots, one VIM2 slot, ExtremeXOS Advanced Edge license
<b>16311</b>	VIM2-SummitStack	VIM2-SummitStack, 2 SummitStack stacking ports
<b>16312</b>	VIM2-10G4X	VIM2-10G4X, 4 10GBASE-X XFP ports
<b>16313</b>	VIM2-SummitStack128	VIM2-SummitStack128, 2 x 64G stacking ports
<b>16315</b>	VIM2-SummitStack-V80	VIM2-SummitStack-V80, 2 x 40G stacking ports

#### Software Options

<b>16321</b>	X480 Core License	ExtremeXOS Core License for Summit X480 series switches
<b>16322</b>	X480 MPLS Feature Pack	ExtremeXOS MPLS Feature Pack for Summit X480 series switches
<b>11011</b>	Direct Attach Feature Pack	For Summit X450a/X460/X480, Summit X650 and BlackDiamond 8800 Series with ExtremXOS 12.5.1 or Greater

#### Power/Fan Options

<b>10916</b>	X480/X650 FAN Module	FAN module for Summit X480 and Summit X650 series switches, spare
<b>10917</b>	Summit X480 AC PSU	AC Power Supply module for Summit X480 series switches
<b>10918</b>	Summit X480 DC PSU	DC Power Supply module for Summit X480 series switches
<b>10121</b>	10GBASE-SR XFP	10GBASE-SR XFP Transceiver, 850nm, up to 300m on Multimode Fiber, LC Connector
<b>10122</b>	10GBASE-LR XFP	10GBASE-LR XFP Transceiver, 1310nm, up to 10km on Single-mode Fiber, LC Connector
<b>10124</b>	10GBASE-ER XFP	10GBASE-ER XFP Transceiver, 1550nm up to 40km on Single-mode Fiber, LC Connector
<b>10125</b>	10GBASE-ZR XFP	10GBASE-ZR XFP Transceiver, 1550nm, up to 80km on Single-mode Fiber, LC Connector
<b>10200</b>	Tunable DWDM XFP	10 Gigabit Ethernet XFP Tunable DWDM module, C-band, SMF 80km, LC connector

#### Stacking Cable Options

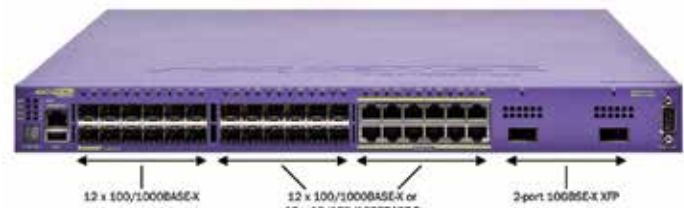
<b>16106</b>	Stacking Cable, 0.5M	SummitStack/UniStack™ Stacking Cable, 0.5M
<b>16107</b>	Stacking Cable, 1.5M	SummitStack/UniStack Stacking Cable, 1.5M
<b>16108</b>	Stacking Cable, 3.0M	SummitStack/UniStack Stacking Cable, 3.0M
<b>16105</b>	Stacking Cable, 5.0M <sup>2</sup>	SummitStack Stacking Cable, 5.0M
<b>17030</b>	Stacking Cable 64G, 1.0M	SummitStack128 Stacking Cable, 1.0M
<b>17026</b>	Stack Cable 128G to 64G	Conversion cable for SummitStack256 and SummitStack128, 1.0M
<b>17034</b>	Stack Cable 128G to 20G	Conversion cable for SummitStack256 and SummitStack, 1.0M
<b>17038</b>	Stack Cable 64G to 20G	Conversion cable for SummitStack128 and SummitStack, 1.0M



JENNE PART NUMBER:	Name	Description
<b>1 Gig SFP+ Module Options</b>		
<b>10051</b>	1000BASE-SX SFP	1000BASE-SX SFP, LC Connector
<b>10052</b>	1000BASE-LX SFP	1000BASE-LX SFP, LC Connector
<b>10053</b>	1000BASE-ZX SFP	1000BASE-ZX SFP, Extra Long Distance SMF 70 km/21 dB Budget, LC Connector
<b>10056</b>	1000BASE-BX-D SFP	1000BASE-BX-D SFP, SMF (1490nm TX/1310nm RX Wavelength)
<b>10057</b>	1000BASE-BX-U SFP	1000BASE-BX-U SFP, SMF (1310nm TX/1490nm RX Wavelength)
<b>10060</b>	100FX/1000LX SFP1	100FX/1000LX SFP, SMF, LC Connector (Requires MCP and 6dB Attenuator for 100FXMMF Operation)
<b>10063</b>	100FX SFP <sup>1</sup>	100FX SFP, MMF, LC Connector
<b>10064</b>	1000BASE-LX100 SFP	1000BASE-LX100 SFP, Extra Long Distance SMF 100 km/30dB Budget, LC Connector
<b>10065</b>	10/100/1000BASE-T SFP <sup>1</sup>	10/100/1000BASE-T, SFP, CAT 5 cable 100m, RJ-45 Connector
<b>10067</b>	100BASE-FX SFP	100M SFP, 100FX MMF, (1310nm, 2km multimode transmission) LC connector
<b>10066</b>	100BASE-LX10 SFP	100M SFP, 100LX10 SMF, (1310nm 10km singlemode transmission) LC connector
<b>10058</b>	100BASE-BX-D SFP	100M SFP, 100BASE-BX-D, SMF (1550nm TX/1310nm RX wavelength), 100 Mbps bidirectional
<b>10059</b>	100BASE-BX-U SFP	100M SFP, 100BASE-BX-U, SMF (1310nm TX/1550nm RX wavelength), 100 Mbps bidirectional

## High-Performance and Highly Scalable Switching and Routing

Summit X480 offers core-class intelligent switching and routing with exceptional port density and high-performance stacking technology powered by the ExtremeXOS modular OS. With its high performance switching and routing, Summit X480 helps enhance the data center, Carrier Ethernet and enterprise aggregation network.



Summit X480-24x Flexible Port Configuration

VIM Options	None (default option)	VIM2-10G4X	VIM2-SummitStack	VIM2-SummitStack128
<b>Summit X480-24x</b>	<ul style="list-style-type: none"> <li>24 x 100/1000BASE-X (SFP)</li> <li>12 x 10/100/1000BASE-T (shared with the last 12 SFP ports)</li> <li>2 x 10GBASE-X (XFP)</li> </ul>	<ul style="list-style-type: none"> <li>24 x 100/1000BASE-X (SFP)</li> <li>12 x 10/100/1000BASE-T (shared with the last 12 SFP ports)</li> <li>6 x 10GBASE-X (XFP)</li> </ul>	<ul style="list-style-type: none"> <li>24 x 100/1000BASE-X (SFP)</li> <li>12 x 10/100/1000BASE-T (shared with the last 12 SFP ports)</li> <li>2 x 10GBASE-X (XFP)</li> <li>2 x SummitStack</li> </ul>	<ul style="list-style-type: none"> <li>24 x 100/1000BASE-X (SFP)</li> <li>12 x 10/100/1000BASE-T (shared with the last 12 SFP ports)</li> <li>2 x 10GBASE-X (XFP)</li> <li>2 x SummitStack128</li> </ul>
<b>Summit X480-48t</b>	<ul style="list-style-type: none"> <li>48 x 10/100/1000BASE-T</li> <li>4 x 100/1000BASE-X SFP (shared with the last 4 10/100/1000BASE-T ports)</li> </ul>	<ul style="list-style-type: none"> <li>48 x 10/100/1000BASE-T</li> <li>4 x 100/1000BASE-X SFP (shared with the last 4 10/100/1000BASE-T ports)</li> <li>4 x 10GBASE-X (XFP)</li> </ul>	<ul style="list-style-type: none"> <li>48 x 10/100/1000BASE-T</li> <li>4 x 100/1000BASE-X SFP (shared with the last 4 10/100/1000BASE-T ports)</li> <li>2 x SummitStack</li> </ul>	<ul style="list-style-type: none"> <li>48 x 10/100/1000BASE-T</li> <li>4 x 100/1000BASE-X SFP (shared with the last 4 10/100/1000BASE-T ports)</li> <li>2 x SummitStack128</li> </ul>
<b>Summit X480-48x</b>	<ul style="list-style-type: none"> <li>48 x 100/1000BASE-X SFP</li> </ul>	<ul style="list-style-type: none"> <li>48 x 100/1000BASE-X SFP</li> <li>4 x 10GBASE-X (XFP)</li> </ul>	<ul style="list-style-type: none"> <li>48 x 100/1000BASE-X SFP</li> <li>2 x SummitStack</li> </ul>	<ul style="list-style-type: none"> <li>48 x 100/1000BASE-X SFP</li> <li>2 x SummitStack128</li> </ul>

## High Availability

Powered by the ExtremeXOS OS, Summit X480 supports process recovery and application upgrades without the need for a system reboot. Summit X480 provides the high network availability required for mission-critical servers and applications through its advanced modular OS, highly available hardware architecture and carrier-grade network redundancy protocols.



Summit X480 High Availability Design



# SUMMIT® X460 SERIES STACKABLE SWITCHES








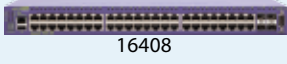
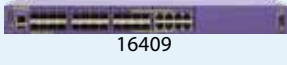
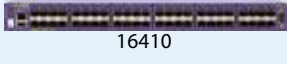

## Summit X460 Series

### Summit X460 Series Scalable Advanced Aggregation Edge Switches with ExtremeXOS®

- Modular ExtremeXOS Operating System (OS)
- Ethernet Automatic Protection Switching (EAPS) resiliency protocol
- Dual, hot-swappable AC/DC power supplies and hot swappable fan tray
- 52-port, 48-port or 28-port Gigabit Ethernet (GbE) connectivity in a 1RU form factor
- Optional two-port 10 GbE to provide 20 Gbps uplinks
- Voice-grade SummitStack™ 40 Gbps and SummitStack-V80 80 Gbps high-speed stacking plus SummitStack-V low-cost, longer distance stacking
- Flexible IEEE 802.3at Power over Ethernet Plus (PoE-plus) to meet the growing demand of converged network applications
- Advanced Layer 2/Layer 3 switching and MPLS/H-VPLS support • User policy and host integrity enforcement, and identity management
- Universal Port Dynamic Security Profiles to provide fine granular security policies in the network
- Threat detection and response instrumentation to react to network intrusion with CLEAR-Flow Security Rules Engine
- Denial of Service (DoS) protection and IP security against man-in-the-middle and DoS attacks to harden the network infrastructure



Summit X460 Series Family

JENNE PART NUMBER: Name		Description
 16401	<b>16401</b> Summit X460-24t	24 10/100/1000BASE-T, 8 100/1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), slot for optional XGM3 module(s), slot for optional stacking module, AC PSU with one unpopulated PSU slot, Fan module, ExtremeXOS Edge license
 16402	<b>16402</b> Summit X460-48t	48 10/100/1000BASE-T, 4 100/1000BASE-X unpopulated SFP, slot for optional XGM3 module(s), slot for optional stacking module, AC PSU with one unpopulated PSU slot, Fan module, ExtremeXOS Edge license
 16403	<b>16403</b> Summit X460-24p	24 10/100/1000BASE-T PoE, 8 100/1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), slot for optional XGM3 module(s), slot for optional stacking module, AC PoE PSU with one unpopulated PSU slot, Fan module, ExtremeXOS Edge license
 16404	<b>16404</b> Summit X460-48p	48 10/100/1000BASE-T PoE, 4 100/1000BASE-X unpopulated SFP, slot for optional XGM3 module(s), slot for optional stacking module, AC PoE PSU with one unpopulated PSU slot, Fan module, ExtremeXOS Edge license
 16405	<b>16405</b> Summit X460-24x	24 100/1000BASE-X unpopulated SFP, 8 10/100/1000BASE-T (4 10/100/1000BASE-T ports shared with SFP ports), slot for optional XGM3 module(s), slot for optional stacking module, AC PSU with one unpopulated PSU slot, Fan module, ExtremeXOS Edge license
 16406	<b>16406</b> Summit X460-48x	48 100/1000BASE-X unpopulated SFP, slot for optional XGM3 module(s), slot for optional stacking module, AC PSU with one unpopulated PSU slot, Fan module, ExtremeXOS Edge license
 16407	<b>16407</b> Summit X460-24tDC	24 10/100/1000BASE-T, 8 100/1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), slot for optional XGM3 module(s), slot for optional stacking module, DC PSU with one unpopulated PSU slot, Fan module, ExtremeXOS Edge license
 16408	<b>16408</b> Summit X460-48tDC	48 10/100/1000BASE-T, 4 100/1000BASE-X unpopulated SFP, slot for optional XGM3 module(s), slot for optional stacking module, DC PSU with one unpopulated PSU slot, Fan module, ExtremeXOS Edge license
 16409	<b>16409</b> Summit X460-24xDC	24 100/1000BASE-X unpopulated SFP, 8 10/100/1000BASE-T (4 10/100/1000BASE-T ports shared with SFP ports), slot for optional XGM3 module(s), slot for optional stacking module, DC PSU with one unpopulated PSU slot, Fan module, ExtremeXOS Edge license
 16410	<b>16410</b> Summit X460-48xDC	48 100/1000BASE-X unpopulated SFP, slot for optional XGM3 module(s), slot for optional stacking module, DC PSU with one unpopulated PSU slot, Fan module, ExtremeXOS Edge license
<b>Software Options</b>		
	<b>16421</b> X460 Advanced Edge Lic	ExtremeXOS Advanced Edge License for Summit X460 series switches
	<b>16422</b> X460 Core license from Edge Lic	ExtremeXOS Advanced Core License upgrade from Edge License for Summit X460 series switches
	<b>16423</b> X460 Core License from Advanced Edge Lic	ExtremeXOS Advanced Core License upgrade from Advanced Edge License for Summit series switches
<b>Power/Fan Options</b>		
	<b>10930</b> Summit 300W AC PSU	AC Power Supply module for Summit X460 series switches
	<b>10931</b> Summit 750W PoE AC PSU	PoE AC Power Supply module for Summit X460 series switches
	<b>10934</b> Summit 300W DC PSU	DC Power Supply module for Summit X460 series switches
	<b>10935</b> Summit X460 fan module	Fan module for Summit X460 series switches, spare





16117



SummitStack Module



16420



QSFP+ Copper Cable



Stacking Cable



SFP Module



XFP Module

## JENNE PART

NUMBER:	Name	Description
<b>Module Options</b>		
16117	XGM3-2sf	Two unpopulated 10 Gigabit SFP+ slots, compatible with Summit X460
16419	SummitStack™ module	SummitStack module for Summit X460
16420	SummitStack-V80 module	SummitStack-V80 module for Summit X460
<b>V-80 Cable Options</b>		
10312	QSFP+ copper cable, 1M	QSFP+ passive copper cable, 1.0M
10315	QSFP+ fiber cable, 10M	QSFP+ active fiber cable, 10M
10318	QSFP+ fiber cable, 100M	QSFP+ active fiber cable, 100M
<b>Stacking Cable Options</b>		
16106	Stacking Cable, 20G, .5m	SummitStack/UniStack™ Stacking Cable, 0.5m
16107	Stacking Cable, 20G, 1.5m	SummitStack/UniStack Stacking Cable, 1.5m
16108	Stacking Cable, 20G, 3.0m	SummitStack/UniStack Stacking Cable, 3.0m
16105	Stacking Cable, 20G, 5.0m	SummitStack Stacking Cable, 5.0M (not supported for UniStack)
<b>10 Gig SFP+ Fiber Modules for XGM3-2SF</b>		
10301	10GBASE-SR SFP+	850nm, LC Connector, transmission length of up to 300m on MMF
10302	10GBASE-LR SFP+	1310nm, LC Connector, transmission length of up to 10km on SMF
10309	10GBASE-ER SFP+	1550nm, LC connector, transmission length of up to 40km on SMF
10304	10GBASE-CR SFP+ 1M	pre-terminated twin-ax copper cable with link lengths of 1m
10305	10GBASE-CR SFP+ 3M	pre-terminated twin-ax copper cable with link lengths of 3m
10306	10GBASE-CR SFP+ 5M	pre-terminated twin-ax copper cable with link lengths of 5m
10307	10GBASE-CR SFP+ 10M	pre-terminated twin-ax copper cable with link lengths of 10m
<b>1 Gig SFP+ Module Options</b>		
10051	SX mini-GBIC	Mini-GBIC SFP, 1000BASE-SX, MMF 220 & 550 meters, LC connector
10052	LX mini-GBIC	Mini-GBIC SFP, 1000BASE-LX, MMF 220 & 550 meters, SMF 10km, LC connector
10053	ZX mini-GBIC	Mini-GBIC SFP, 1000BASE-ZX, SMF 70km, LC connector
10056	1000BASE-BX-D BiDi SFP	1000BASE-BX-D SFP, 1490-nm TX/1310-nm RX wavelength
10057	1000BASE-BX-U BiDi SFP	1000BASE-BX-U SFP, 1310-nm TX/1490-nm RX wavelength
10060	100FX/1000LX SFP1	100FX/1000LX SFP, SMF, LC Connector (Requires MCP and 6dB Attenuator for 100FX-MMF Operation)
10063	100FX SFP1	100FX SFP, MMF, LC Connector
10064	1000BASE-LX100 SFP	1000BASE-LX100 SFP, Extra Long Distance SMF 100 km/30dB Budget, LC Connector
10065	10/100/1000BASE-T SFP1	10/100/1000BASE-T, SFP, CAT 5 cable 100m, RJ-45 Connector
10067	100BASE-FX SFP	100M SFP, 100FX MMF, (1310nm, 2km multimode transmission) LC connector
10066	100BASE-LX10 SFP	100M SFP, 100LX10 SMF, (1310nm 10km single mode transmission) LC connector
10058	100BASE-BX-D SFP	100M SFP, 100BASE-BX-D, SMF (1550nm TX/1310nm RX wavelength), 100 Mbps bidirectional
10059	100BASE-BX-U SFP	100M SFP, 100BASE-BX-U, SMF (1310nm TX/1550nm RX wavelength), 100 Mbps bidirectional
10071	SX SFP 10 Pack	SX-SFP 10 Pack
10072	LX SFP 10 Pack	LX-SFP 10 Pack

## SummitStack Stacking Architecture

- Single management point for up to eight units
- High-speed 40 Gbps or 80 Gbps stacking
- Rapid Failover for converged applications
- Can mix Summit X250e, Summit X450a/e series, Summit X460, Summit X480 and Summit X650 series switches for SummitStack 40 Gbps stacking



SummitStack Stacking Architecture



## Summit X450a Series

### Scalable Advanced Aggregation Switch with ExtremeXOS®

- Core switch for a small network
- Aggregation switch in a traditional three tiered network that requires high availability and ExtremeXOS advanced features
- Customer Edge (CE) or Provider Edge (PE) device in a Metro Ethernet network
- Modular ExtremeXOS operating system • EAPS resiliency protocol
- Interconnect switch providing low latency connections for High Performance Cluster Computing (HPCC)
- SummitStack™—highly available, high-speed stacking support
- High bandwidth, non-blocking architecture for demanding edge applications
- High density gigabit ports with optional 10 gigabit uplinks that provide high-performance aggregation
- Advanced routing protocols (OSPF, BGP and multicast) for an efficient and productive small network core
- QoS with advanced traffic management capabilities for triple play services in metro Ethernet networks



Summit X450a Series Family



16151



16157



Core License



EPS-500



EPS-T2 with EPS-150DC



Stacking Cable



LR SFP+ Module

#### JENNE PART

#### NUMBER: Name

#### Description

<b>16151</b>	Summit X450a-24t	24 10/100/1000BASE-T, 4 Unpopulated mini-GBIC Ports, Option Slot for 10 Gigabit Option Card XGM2-2xn/xf, 1 AC PSU, ExtremeXOS Advanced Edge License, Connector for EPS-500 or EPS-LD External Redundant PSU
<b>16153</b>	Summit X450a-24tDC	24 10/100/1000BASE-T, 4 Unpopulated mini-GBIC Ports, Option Slot for 10 Gigabit Option Card XGM2-2xn/xf, 1 DC PSU, ExtremeXOS Advanced Edge License, Connector for EPS-150DC External Redundant PSU
<b>16155</b>	Summit X450a-24x	24 1000BASE-X mini-GBIC ports, 4 10/100/1000BASE-T Ports, Option Slot for 10 Gig Option Card XGM2-2xn/xf, 1 AC PSU, ExtremeXOS Advanced Edge License, Connector for EPS-500 or EPS-LD External Redundant PSU
<b>16159</b>	Summit X450a-24xDC	24 1000BASE-X mini-GBIC, 4 10/100/1000BASE-T Ports, Option Slot for 10 Gigabit Option Card XGM2-2xn/xf, 1 DC PSU, ExtremeXOS Advanced Edge License, Connector for EPS-150DC External Redundant PSU
<b>16157</b>	Summit X450a-48t	48 10/100/1000 BASE-T, 4 Unpopulated mini-GBIC Ports, Option Slot for 10 Gigabit Option Card XGM2-2xn/xf, 1 AC PSU, ExtremeXOS Advanced Edge License, Connector for EPS-500 External Redundant PSU
<b>16165</b>	Summit X450a-48tDC	48 10/100/1000 BASE-T, 4 Unpopulated mini-GBIC Ports, Option Slot for 10 Gigabit Option Card XGM2-2xn/xf, 1 DC PSU, ExtremeXOS Advanced Edge License, Connector for EPS-150DC External Redundant PSU

#### Software Options

<b>16170</b>	X450a Core License	ExtremeXOS Core License for Summit X450-24x, Summit X450-24t, Summit X450a-24t/24tDC, Summit X450a-48t/48tDC and Summit X450a-24x/24xDC
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#### Redundant Power Options

<b>10911</b>	EPS-500 External AC PSU	External Power System 500 Watts, with Cable
<b>45019</b>	EPS-LD External AC PSU	External Power System, with Cable
<b>10910</b>	EPS-T2	External Power System Power Tray. Accepts up to two EPS-150DC Power Modules. Add one EPS-150DC for each Redundantly Powered System
<b>10909</b>	EPS-150DC	External Power System Power Module for EPS-T, 150 Watts, with Cable, DC Input

#### Stacking Cable Options

<b>16106</b>	Stacking Cable, 20G, .5m	SummitStack/UniStack™ Stacking Cable, 0.5m
<b>16107</b>	Stacking Cable, 20G, 1.5m	SummitStack/UniStack Stacking Cable, 1.5m
<b>16108</b>	Stacking Cable, 20G, 3.0m	SummitStack/UniStack Stacking Cable, 3.0m
<b>16105</b>	Stacking Cable, 20G, 5.0m	SummitStack Stacking Cable, 5.0M (not supported for UniStack)

#### 1 Gig SFP+ Module Options

<b>10051</b>	SX mini-GBIC	Mini-GBIC SFP, 1000BASE-SX, MMF 220 & 550 meters, LC connector
<b>10052</b>	LX mini-GBIC	Mini-GBIC SFP, 1000BASE-LX, MMF 220 & 550 meters, SMF 10km, LC connector
<b>10053</b>	ZX mini-GBIC	Mini-GBIC SFP, 1000BASE-ZX, SMF 70km, LC connector
<b>10056</b>	1000BASE-BX-D BiDi SFP	1000BASE-BX-D SFP, 1490-nm TX/1310-nm RX wavelength
<b>10057</b>	1000BASE-BX-U BiDi SFP	1000BASE-BX-U SFP, 1310-nm TX/1490-nm RX wavelength
<b>10071</b>	SX SFP 10 Pack	SX-SFP 10 Pack
<b>10072</b>	LX SFP 10 Pack	LX-SFP 10 Pack



XGM2-2bt



XGM2-2sf



SFP Module



XGM2-2xf



XFP Module



XGM2-2xn



XENPAK Module

## JENNE PART

### NUMBER: Name

### Description

#### 10 Gig XGM2 Module Options

<b>16115</b>	XGM2-2bt	Option card, two 10GBASE-T ports
<b>16114</b>	XGM2-2sf	Option card, two unpopulated 10 Gigabit SFP+ slots
<b>16112</b>	XGM2-2xf	Option Card, Two Unpopulated 10 Gigabit XFP Slots
<b>16113</b>	XGM2-2xn	Option Card, Two Unpopulated 10 Gigabit XENPAK Slots

#### 10 Gig SFP+ Fiber Modules for XGM2-2SF

<b>10301</b>	SR SFP+ Module	10 Gigabit Ethernet SFP+ module, 850nm, MMF 26-300m link, LC connector
<b>10302</b>	LR SFP+ Module	10 Gigabit Ethernet SFP+ module, 1310nm, SMF 10km link, LC connector
<b>10304</b>	SFP+ Cable Assembly 1M	10 Gigabit Ethernet SFP+ passive cable assembly, 1m length
<b>10305</b>	SFP+ Cable Assembly 3M	10 Gigabit Ethernet SFP+ passive cable assembly, 3m length
<b>10306</b>	SFP+ Cable Assembly 5M	10 Gigabit Ethernet SFP+ passive cable assembly, 5m length
<b>10307</b>	SFP+ Cable Assembly 10M	10 Gigabit Ethernet SFP+ passive cable assembly, 10m length

#### 10 Gig XFP+ Fiber Modules for XGM2-2XF

<b>10121</b>	SR XFP Module	10GBASE-SR XFP, LC Connector
<b>10122</b>	LR XFP Module	10GBASE-LR XFP, LC Connector
<b>10124</b>	ER XFP Module	10GBase-ER XFP 40km reach LC connector
<b>10125</b>	ZR XFP module	10 Gigabit Ethernet XFP module, 1550nm, SMF 80km, LC connector

#### 10 Gig XENPAK Fiber Modules for XGM2-2XN

<b>10112</b>	ER XENPAK Module	10 Gigabit Ethernet XENPAK, 1550nm, SMF 40km, SC connector
<b>10111</b>	LR XENPAK Module	10 Gigabit Ethernet XENPAK, 1310nm, SMF 10km, SC connector
<b>10116E</b>	LW XENPAK Module	WAN PHY XENPAK, 10GBASE-LW, 1310nm, up to 10 KM over SMF, SC Connector, RoHS-5
<b>10114</b>	LX4 XENPAK Module	10 Gigabit Ethernet XENPAK, 1310nm WWDM, MMF 300m and SMF 10km, SC connector
<b>10110</b>	SR XENPAK Module	10 Gigabit Ethernet XENPAK, 850nm, MMF 300m, SC connector
<b>10113</b>	ZR XENPAK Module	10 Gigabit Ethernet XENPAK, 1550nm, SMF 80km, SC connector

## SummitStack Stacking Architecture

- Single management point for up to eight units
- High-speed 40 Gbps stacking
- Rapid Failover for converged applications
- Can mix Summit X250e and Summit X450 series switches



SummitStack Stacking Architecture

## Summit X450a Redundant Power Supply Units (PSUs)

### EPS-500 and EPS-LD

EPS-500/EPS-LD is the redundant AC Power Supply for higher power consuming AC PSU based switches including Power-over-Ethernet enabled switches. EPS-500/EPS-LD is one rack unit height and works in standalone. EPS-500/EPS-LD can be rack mounted in a regular 19 inch rack system. EPS-500/EPS-LD comes with a DC output cable to connect between the Summit switch and EPS-500/EPS-LD.



Front View



Rear View

### EPS-150DC and EPS-T2

EPS-150DC is the redundant DC Power Supply for DC PSU-based Summit switches. When installing it, the EPS-T2 power tray is required to rack mount this external power supply. EPS-T2 power tray can take up to two EPS-150DC power modules, and each EPS-150DC works individually. EPS-150DC comes with DC output cable to connect between the Summit switch and EPS-150DC.



Front View



Rear View

## Redundant PSU Compatibility Matrix

Models	Part Number(s)	External Redundant PSU options
Summit X450a-24t	<b>16151</b>	EPS-500 ( <b>10911</b> ) or EPS-LD ( <b>45019</b> ) external power supply
Summit X450a-48t	<b>16157</b>	EPS-500 external power supply ( <b>10911</b> )
Summit X450a-24x	<b>16155</b>	EPS-500 ( <b>10911</b> ) or EPS-LD ( <b>45019</b> ) external power supply
Summit X450a-24tDC	<b>16153</b>	EPS-150DC power module ( <b>10909</b> ) with EPS-T2 ( <b>10910</b> )
Summit X450a-48tDC	<b>16165</b>	EPS-150DC power module ( <b>10909</b> ) with EPS-T2 ( <b>10910</b> )
Summit X450a-24xDC	<b>16159</b>	EPS-150DC power module ( <b>10909</b> ) with EPS-T2 ( <b>10910</b> )

Every effort has been made to ensure the integrity of this catalog. Jenne, Inc. cannot be held responsible for any misrepresentation associated with any products due to omissions, typographic errors or misprints.



## Summit X450e Series

### Summit X450e Series PoE Edge Switches with ExtremeXOS®

- Edge PoE switch providing high-density Gigabit PoE to the desktop in a network running ExtremeXOS from the core to the edge
- Modular ExtremeXOS operating system • EAPS resiliency protocol
- SummitStack™—highly available, high-speed stacking support
- High bandwidth, non-blocking architecture for demanding edge applications
- Exceptional QoS with advanced traffic management capabilities for converged applications
- Convergence ready connectivity with Voice over IP automatic provisioning
- Efficient management to handle convergence-driven network changes with Gigabit PoE



Summit X450e Series Family



16141



16142



16147



16148



Core License



EPS-500



EPS-T2 with EPS-150DC



Stacking Cable



LR SFP+ Module



XGM2-2bt

#### JENNE PART

##### NUMBER: Name

##### Description

<b>16141</b>	Summit X450e-24t	24 10/100/1000BASE-T; 4 unpopulated 1000BASE-X SFP ports (shared); slot for XGM2 10 Gigabit Ethernet module; 2 SummitStack stacking ports; 1 AC PSU; connector for EPS-500 external redundant PSU; ExtremeXOS Edge license
<b>16142</b>	Summit X450e-24p	24 10/100/1000BASE-T, 4 Unpopulated mini-GBIC Ports, Option Slot for 10 Gigabit Option Card XGM2-2xn/xf, 1 AC PSU, ExtremeXOS Advanced Edge License, Connector for EPS-500 or EPS-LD External Redundant PSU with PoE (standard 370 and up to 740 Watts)
<b>16147</b>	Summit X450e-48t	48 10/100/1000BASE-T; 4 unpopulated 1000BASE-X SFP ports (shared); slot for XGM2 10 Gigabit Ethernet module; 2 SummitStack stacking ports; 1 AC PSU; connector for EPS-500 external redundant PSU; ExtremeXOS Edge license
<b>16148</b>	Summit X450e-48p	48 10/100/1000BASE-T, 4 Unpopulated mini-GBIC Ports, Option Slot for 10 Gigabit Option Card XGM2-2xn/xf, 1 DC PSU, ExtremeXOS Advanced Edge License, Connector for EPS-150DC External Redundant PSU with PoE (standard 370 and up to 740 Watts)
<b>16150</b>	Summit X450e-48pTAA	48 1000BASE-X mini-GBIC ports, 4 10/100/1000BASE-T Ports, Option Slot for 10 Gig Option Card XGM2-2xn/xf, 1 AC PSU, ExtremeXOS Advanced Edge License, Connector for EPS-500 or EPS-LD External Redundant PSU with PoE (standard 370 and up to 740 Watts)

#### Software Options

<b>16171</b>	X450e Adv Edge License	ExtremeXOS Advanced Edge License for Summit X450e-24p, Summit X450e-48p and Summit X450e-48p-TAA
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#### Redundant Power Options

<b>10911</b>	EPS-500 External AC PSU	External Power System 500 Watts, with Cable
<b>45019</b>	EPS-LD External AC PSU	External Power System, with Cable
<b>10912</b>	EPS-C	External Power System Chassis with cable, Accepts up to three EPS-600LS power modules
<b>10913</b>	EPS-600LS	External Power System power module for EPS-C, 600 Watts

#### Stacking Cable Options

<b>16106</b>	Stacking Cable, 20G, .5m	SummitStack/UniStack™ Stacking Cable, 0.5m
<b>16107</b>	Stacking Cable, 20G, 1.5m	SummitStack/UniStack Stacking Cable, 1.5m
<b>16108</b>	Stacking Cable, 20G, 3.0m	SummitStack/UniStack Stacking Cable, 3.0m
<b>16105</b>	Stacking Cable, 20G, 5.0m	SummitStack Stacking Cable, 5.0M (not supported for UniStack)

#### 1 Gig SFP+ Module Options

<b>10051</b>	SX mini-GBIC	Mini-GBIC SFP, 1000BASE-SX, MMF 220 & 550 meters, LC connector
<b>10052</b>	LX mini-GBIC	Mini-GBIC SFP, 1000BASE-LX, MMF 220 & 550 meters, SMF 10km, LC connector
<b>10053</b>	ZX mini-GBIC	Mini-GBIC SFP, 1000BASE-ZX, SMF 70km, LC connector
<b>10056</b>	1000BASE-BX-D BiDi SFP	1000BASE-BX-D SFP, 1490-nm TX/1310-nm RX wavelength
<b>10057</b>	1000BASE-BX-U BiDi SFP	1000BASE-BX-U SFP, 1310-nm TX/1490-nm RX wavelength
<b>10071</b>	SX SFP 10 Pack	SX-SFP 10 Pack
<b>10072</b>	LX SFP 10 Pack	LX-SFP 10 Pack

#### 10 Gig XGM2 Module Options

<b>16115</b>	XGM2-2bt	Option card, two 10GBASE-T ports
<b>16114</b>	XGM2-2sf	Option card, two unpopulated 10 Gigabit SFP+ slots
<b>16112</b>	XGM2-2xf	Option Card, Two Unpopulated 10 Gigabit XFP Slots
<b>16113</b>	XGM2-2xn	Option Card, Two Unpopulated 10 Gigabit XENPAK Slots



XGM2-2sf



SFP Module



XGM2-2xf



XFP Module



XGM2-2xn



XENPAK Module

## JENNE PART

NUMBER: Name Description

### 10 Gig SFP+ Fiber Modules for XGM2-2SF

<b>10301</b>	SR SFP+ Module	10 Gigabit Ethernet SFP+ module, 850nm, MMF 26-300m link, LC connector
<b>10302</b>	LR SFP+ Module	10 Gigabit Ethernet SFP+ module, 1310nm, SMF 10km link, LC connector
<b>10304</b>	SFP+ Cable Assembly 1M	10 Gigabit Ethernet SFP+ passive cable assembly, 1m length
<b>10305</b>	SFP+ Cable Assembly 3M	10 Gigabit Ethernet SFP+ passive cable assembly, 3m length
<b>10306</b>	SFP+ Cable Assembly 5M	10 Gigabit Ethernet SFP+ passive cable assembly, 5m length
<b>10307</b>	SFP+ Cable Assembly 10M	10 Gigabit Ethernet SFP+ passive cable assembly, 10m length

### 10 Gig XFP+ Fiber Modules for XGM2-2XF

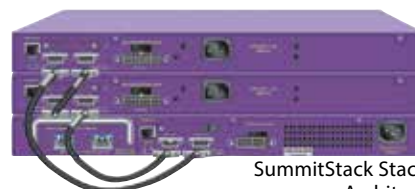
<b>10121</b>	SR XFP Module	10GBASE-SR XFP, LC Connector
<b>10122</b>	LR XFP Module	10GBASE-LR XFP, LC Connector
<b>10124</b>	ER XFP Module	10GBase-ER XFP 40km reach LC connector
<b>10125</b>	ZR XFP module	10 Gigabit Ethernet XFP module, 1550nm, SMF 80km, LC connector

### 10 Gig XENPAK Fiber Modules for XGM2-2XN

<b>10112</b>	ER XENPAK Module	10 Gigabit Ethernet XENPAK, 1550nm, SMF 40km, SC connector
<b>10111</b>	LR XENPAK Module	10 Gigabit Ethernet XENPAK, 1310nm, SMF 10km, SC connector
<b>10116E</b>	LW XENPAK Module	WAN PHY XENPAK, 10GBASE-LW, 1310nm, up to 10 KM over SMF, SC Connector, RoHS-5
<b>10114</b>	LX4 XENPAK Module	10 Gigabit Ethernet XENPAK, 1310nm WWDM, MMF 300m and SMF 10km, SC connector
<b>10110</b>	SR XENPAK Module	10 Gigabit Ethernet XENPAK, 850nm, MMF 300m, SC connector
<b>10113</b>	ZR XENPAK Module	10 Gigabit Ethernet XENPAK, 1550nm, SMF 80km, SC connector

## SummitStack Stacking Architecture

- Single management point for up to eight units
- High-speed 40 Gbps stacking
- Rapid Failover for converged applications
- Can mix Summit X250e and Summit X450 series switches



SummitStack Stacking Architecture

## Summit X450e Redundant Power Supply Units (PSUs)

### EPS-500 and EPS-LD

EPS-500/EPS-LD is the redundant AC Power Supply for higher power consuming AC PSU based switches including Power-over-Ethernet enabled switches. EPS-500/EPS-LD is one rack unit height and works in standalone. EPS-500/EPS-LD can be rack mounted in a regular 19 inch rack system. EPS-500/EPS-LD comes with a DC output cable to connect between the Summit switch and EPS-500/EPS-LD.

### EPS-600LS and EPS-C

EPS-600LS is a power module that works with the EPS-C External Power System Chassis. EPS-C has three slots for EPS-600LS and one DC output to connect to high density PoE Summit switches. Depending upon the number of EPS-600LS installed in EPS-C, it can provide 1) Redundant configuration for up to 370 watts of PoE power when one EPS-600LS installed; 2) Non-Redundant configuration for up to 740 watts of PoE power when two EPS-600LS installed; and 3) Redundant configuration for up to 740 watts of PoE power when three EPS-600LS are installed. EPS-C comes with a DC output cable to connect between the Summit switch and EPS-C with EPS-600LS installed.



Front View



Rear view



Front View



Rear View



Configured View

## Redundant PSU Compatibility Matrix

Models	Part Number(s)	External Redundant PSU options
Summit X450e-24p	<b>16142</b>	EPS-500 external power supply ( <b>10911</b> )
Summit X450e-48p	<b>16148</b>	EPS-C ( <b>10912</b> ) and EPS-600LS ( <b>10913</b> )
Summit X450e-48p-TAA	<b>16150</b>	EPS-C ( <b>10912</b> ) and EPS-600LS ( <b>10913</b> )

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## Summit X440 Series

### Summit X440 Series PoE Edge Switches with ExtremeXOS®

- PoE/PoE+ for wireless access points, cameras and IP phones
- Extending Intelligent 10/100/1000 BASE-T connectivity to the desktop
- Line rate on all ports including 2 x 10GBASE-X SFP+ uplinks
- Stack using SummitStack ports or SummitStack-V over 10GBASE-X SFP+ ports
- Stack up to 8 members
- Stack with other Summit products from Extreme
- Fan at low speed or off when room temperature is < 300 C for minimal noise



Summit X440 Series Family



16501



16503



16506



16507



16509



Core License



EPS-C2 with 10931



LR SFP+ Module

#### JENNE PART

#### NUMBER: Name

#### Description

<b>16501</b>	Summit X440-8t	8 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP, Summit Stack Stacking ports, 1 AC PSU, ExtremeXOS Edge license
<b>16502</b>	Summit X440-8p	8 10/100/1000BASE-T PoE-plus, 4 1000BASE-X unpopulated SFP, Summit Stack Stacking ports, 1 AC PSU, ExtremeXOS Edge license
<b>16503</b>	Summit X440-24t	24 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), SummitStack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
<b>16504</b>	Summit X440-24p	24 10/100/1000BASE-T PoE-plus, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), SummitStack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
<b>16505</b>	Summit X440-48t	48 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), Summit Stack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
<b>16506</b>	Summit X440-48p	48 10/100/1000BASE-T PoE-plus, 4 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), Summit Stack Stacking ports, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
<b>16507</b>	Summit X440-24t-10G	24 10/100/1000BASE-T, 2 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), 2 10GBASE-X SFP+, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
<b>16508</b>	Summit X440-24p-10G	24 10/100/1000BASE-T PoE-plus, 2 1000BASE-X unpopulated SFP (4 SFP ports shared with 10/100/1000BASE-T ports), 2 10GBASE-X SFP+, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
<b>16509</b>	Summit X440-48t-10G	48 10/100/1000BASE-T, 2 1000BASE-X unpopulated SFP (2 SFP ports shared with 10/100/1000BASE-T ports), 2 10GBASE-X SFP+, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply
<b>16510</b>	Summit X440-48p-10G	48 10/100/1000BASE-T PoE-plus, 2 1000BASE-X unpopulated SFP (2 SFP ports shared with 10/100/1000BASE-T ports), 2 10GBASE-X SFP+, 1 AC PSU, ExtremeXOS Edge license, connector for external power supply

#### Software Options

<b>16521</b>	X440 Adv Edge License	ExtremeXOS Advanced Edge License for Summit X440 Series Switches
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#### Redundant Power Options

<b>10936</b>	EPS-C2	External Power System Chassis 2. Accepts up to three Summit 750W AC PoE PSU 48V power supplies. Accepts up to 5 EPS-CBL-2x7 or up to 1 EPS-CBL-2x9 cables.
<b>10939</b>	EPS-CBL-2x7	External Power System Cable that connects EPS to any X440 for providing redundant DC power.

#### 10 Gig SFP+ Fiber Modules for XGM2-25F

<b>10301</b>	SR SFP+ Module	10 Gigabit Ethernet SFP+ module, 850nm, MMF 26-300m link, LC connector
<b>10302</b>	LR SFP+ Module	10 Gigabit Ethernet SFP+ module, 1310nm, SMF 10km link, LC connector
<b>10303</b>	SFP+ LRM Module	10 Gigabit Ethernet SFP+ module, 1310nm, MMF 220m link, LC connector
<b>10304</b>	SFP+ Cable Assembly 1M	10 Gigabit Ethernet SFP+ passive cable assembly, 1m length
<b>10305</b>	SFP+ Cable Assembly 3M	10 Gigabit Ethernet SFP+ passive cable assembly, 3m length
<b>10306</b>	SFP+ Cable Assembly 5M	10 Gigabit Ethernet SFP+ passive cable assembly, 5m length
<b>10307</b>	SFP+ Cable Assembly 10M	10 Gigabit Ethernet SFP+ passive cable assembly, 10m length
<b>10309</b>	10GBASE-ER SFP+	10 Gigabit Ethernet SFP+ module, 1550nm, SMF 40km link, LC connector



## JENNE PART

NUMBER: Name Description

### 1 Gig SFP+ Module Options

10051	SX mini-GBIC	Mini-GBIC SFP, 1000BASE-SX, MMF 220 & 550 meters, LC connector
10052	LX mini-GBIC	Mini-GBIC SFP, 1000BASE-LX, MMF 220 & 550 meters, SMF 10km, LC connector
10053	ZX mini-GBIC	Mini-GBIC SFP, 1000BASE-ZX, SMF 70km, LC connector
10056	1000BASE-BX-D BiDi SFP	1000BASE-BX-D SFP, 1490-nm TX/1310-nm RX wavelength
10057	1000BASE-BX-U BiDi SFP	1000BASE-BX-U SFP, 1310-nm TX/1490-nm RX wavelength
10060	100FX/1000LX SFP	100FX/1000LX SFP, SMF, LC Connector (Requires MCP and 6dB Attenuator for 100FX-MMF Operation)
10063	100FX SFP	100FX SFP, MMF, LC Connector
10064	1000BASE-LX100 SFP	1000BASE-LX100 SFP, Extra Long Distance SMF 100 km/30dB Budget, LC Connector
10065	10/100/1000Base-T SFP	10/100/1000BASE-T SFP module, Category 5 cable 100m link, RJ45-Connector

## SummitStack Stacking Architecture

- Single management point for up to eight units
- High-speed 40 Gbps stacking
- Rapid Failover for converged applications
- Can mix Summit X250e, Summit X440 Series, Summit X450a/e,- Series, Summit X460, Summit X480, Summit X650 and Summit X670 Series switches for SummitStack™ 40 Gbps stacking



SummitStack Stacking Architecture

## External Power Supply

### EPS-C2

The EPS-C2 is an external power supply that supplies redundant power to Summit X440 switches. The EPS-C2 is a standalone unit that can be rack mounted in a regular 19-inch rack system. The EPS-C2 can be populated with up to 3 Summit 750W PoE AC PSU to provide a total redundant power budget of up to 2040W. The EPS-C2 can connect up to 5 Summit X440s actively providing power to all 5 if needed.



Front View



Rear view



Configured View



# SUMMIT® X250 SERIES STACKABLE SWITCHES

## Summit X250 Series

### Summit X250e series 24- or 48-port Fast Ethernet stackable switches

- Edge PoE and non-PoE switch providing intelligent 10/100BASE-T connectivity to the desktop in a network running ExtremeXOS® from the core to the edge
- Carrier Ethernet edge switching with 100BASE-X provides advanced fiber connectivity to the customer for both AC and DC powered environment
- Modular ExtremeXOS operating system • Ethernet Automatic Protection Switching (EAPS) resiliency protocol
- SummitStack™—highly available, high-speed stacking support
- Quality of Service (QoS) with advanced traffic management capabilities for converged applications
- Convergence ready connectivity with Voice-over-IP (VoIP) automatic provisioning with Universal Port capability
- Comprehensive network management • User policy and host integrity enforcement
- Extensive MAC and IP security functionality to help prevent man-in-the-middle attacks
- Universal Port dynamic security profile to provide fine granular security policy in the network



Summit X250 Series Family



15101



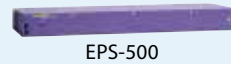
15103



15109



ADV Edge License



EPS-500



EPS-T2 with EPS-150DC



EPS-600LS Configured



LR SFP+ Module

#### JENNE PART

NUMBER:	Name	Description
15101	Summit X250e-24t	24-port 10/100BASE-TX
15103	Summit X250e-48t	48-port 10/100BASE-TX
15105	Summit X250e-24p	24-port 10/100BASE-TX with PoE (370 Watts)
15107	Summit X250e-48p	48-port 10/100BASE-TX with PoE (standard 370 and up to 740 Watts)
15109	Summit X250e-24x	24-port 100BASE-X SFP
15121	Summit X250e-24tDC	24-port 10/100BASE-TX with DC PSU
15122	Summit X250e-48tDC	48-port 10/100BASE-TX with DC PSU
15123	Summit X250e-24xDC	24-port 100BASE-T SFP with DC PSU

#### Software Options

15113	X250e Adv Edge License	ExtremeXOS Advanced Edge License, Summit X250e series
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#### Redundant Power Options

10906	EPS-T	External Power System power tray, Accepts up to two EPS-160 power modules, Compatible with X250e-24t and X250e-48t
10907	EPS-160	External Power System power module for EPS-T, 160 Watts, with cable, Compatible with X250e-24t and X250e-48t
10911	EPS-500 External AC PSU	External Power System 500 Watts, with Cable, Compatible with X250e-24p
10912	EPS-C	External Power System Chassis with cable, Accepts up to three EPS-600LS power modules, Compatible with X250e-48p
10913	EPS-600LS	External Power System power module for EPS-C, 600 Watts
10909	EPS-150DC	External Power System power module for EPS-T, 150 Watts, with cable, DC Input, Compatible with X250e-24tDC, X250e-48tDC and X250e-24xDC
10910	EPS-T2	External Power System power tray, Accepts up to two EPS-150DC power modules, Add one EPS-150DC for each redundantly powered system, Compatible with X250e-24tDC, X250e-48tDC and X250e-24xDC

#### 1 Gig SFP+ Module Options

10051	SX mini-GBIC	Mini-GBIC SFP, 1000BASE-SX, MMF 220 & 550 meters, LC connector
10052	LX mini-GBIC	Mini-GBIC SFP, 1000BASE-LX, MMF 220 & 550 meters, SMF 10km, LC connector
10053	ZX mini-GBIC	Mini-GBIC SFP, 1000BASE-ZX, SMF 70km, LC connector
10064	LX100 SFP	1000BASE-LX100 SFP, Extra Long Distance SMF 100 km/30 dB Budget, LC Connector
10056	1000BASE-BX-D BiDi SFP	1000BASE-BX-D SFP, 1490-nm TX/1310-nm RX wavelength
10057	1000BASE-BX-U BiDi SFP	1000BASE-BX-U SFP, 1310-nm TX/1490-nm RX wavelength
10058	100BASE-BX SFP BX-D	100M SFP, 100BASE-BX-D, SMF (1550-nm TX/1310-nm RX wavelength), 100 Mbps bidirectional
10059	100BASE-BX SFP BX-U	100M SFP, 100BASE-BX-U, SMF (1310-nm TX/1550-nm RX wavelength), 100 Mbps bidirectional
10066	100BASE-LX10 SFP	100M SFP, 100LX10 SMF, (1310-nm 10km singlemode transmission) LC connector
10067	100BASE-FX SFP	100M SFP, 100FX MMF, (1310-nm, 2km multimode transmission) LC connector
10071	SX SFP 10 Pack	SX-SFP 10 Pack
10072	LX SFP 10 Pack	LX-SFP 10 Pack



Stacking Cable

## JENNE PART

NUMBER: Name

Description

### Stacking Cable Options

<b>16106</b>	Stacking Cable, 20G, .5m	SummitStack/UniStack™ Stacking Cable, 0.5m
<b>16107</b>	Stacking Cable, 20G, 1.5m	SummitStack/UniStack Stacking Cable, 1.5m
<b>16108</b>	Stacking Cable, 20G, 3.0m	SummitStack/UniStack Stacking Cable, 3.0m
<b>16105</b>	Stacking Cable, 20G, 5.0m	SummitStack Stacking Cable, 5.0M (not supported for UniStack)

## SummitStack Stacking Architecture

- Single management point for up to eight units
- High-speed 40 Gbps stacking
- Rapid Failover for converged applications
- Can mix Summit X250e and Summit X450 series switches



SummitStack Stacking Architecture

## Summit X250e Redundant Power Supply Units (PSUs)

### EPS-160 and EPS-T

EPS-160 is the redundant AC Power Supply for lower power consuming AC PSU based summit switches. When installing it, EPS-T power tray is required to rack mount this external power supply. EPS-T power tray can take up to two EPS-160 power modules, and each EPS-160 works individually. EPS-160 comes with DC output cable to connect between Summit switch and EPS-160.



Front View



Front View



Rear View

### EPS-500

EPS-500 is the redundant AC Power Supply for higher power consuming AC PSU based switches including Power-over-Ethernet enabled switches. EPS-500 is one rack unit height and works in standalone. EPS-500 can be rack mounted in a regular 19 inch rack system. EPS-500 comes with a DC output cable to connect between the Summit switch and EPS-500.



Front View



Rear View

### EPS-600LS and EPS-C

EPS-600LS is a power module that works with the EPS-C External Power System Chassis. EPS-C has three slots for EPS-600LS and one DC output to connect to high density PoE Summit switches. Depending upon the number of EPS-600LS installed in EPS-C, it can provide 1) Redundant configuration for up to 370 watts of PoE power when one EPS-600LS installed; 2) Non-Redundant configuration for up to 740 watts of PoE power when two EPS-600LS installed; and 3) Redundant configuration for up to 740 watts of PoE power when three EPS-600LS are installed. EPS-C comes with a DC output cable to connect between the Summit switch and EPS-C with EPS-600LS installed.



Configured View

### EPS-150DC and EPS-T2

EPS-150DC is the redundant DC Power Supply for DC PSU-based Summit switches. When installing it, the EPS-T2 power tray is required to rack mount this external power supply. EPS-T2 power tray can take up to two EPS-150DC power modules, and each EPS-150DC works individually. EPS-150DC comes with DC output cable to connect between the Summit switch and EPS-150DC.



Front View



Rear View

## Redundant PSU Compatibility Matrix

Models	Part Number(s)	External Redundant PSU options
Summit X250e-24t/48t/24x	<b>15101/15103/15109</b>	EPS-160 power module (10907) with EPS-T (10906)
Summit X250e-24p	<b>15105</b>	EPS-500 external power supply (10911)
Summit X250e-48p/48p-TAA	<b>15107/15108</b>	EPS-C (10912) and EPS-600LS (10913)
Summit X250e-24tDC/48tDC/24xDC	<b>15121/15122/15123</b>	EPS-150DC power module (10909) with EPS-T2 (10910)

Every effort has been made to ensure the integrity of this catalog. Jenne, Inc. cannot be held responsible for any misrepresentation associated with any products due to omissions, typographic errors or misprints.



## Summit X350 Series

Summit X350 series 24 or 48-port 10/100/1000 Gigabit Ethernet stand-alone switches

- Edge switch providing basic 10/100/1000BASE-T connectivity to the desktop in a network running ExtremeXOS® from the core to the edge
- Single streamlined operating system across the entire enterprise network
- ExtremeXOS provides scripting capability to automate network configuration
- LLDP/LLDP-MED to provide device management • Comprehensive network management through consistent
- ExtremeXOS CLI, SNMP, Web-based management and XML interface • Modular ExtremeXOS operating system
- EAPS resiliency protocol • QoS with advanced traffic management capabilities for converged applications
- Redundant Power Supply to keep the network up even under power anomaly



Summit X350 Series Family



16201



16202



EPS-500



LR SFP+ Module



XGM2-2bt



XGM2-2sf



SFP+ Module



XGM2-2xf



XFP Module



XGM2-2xn



XENPAK Module

### JENNE PART

#### NUMBER: Name

#### Description

<b>16201</b>	Summit X350-24t	24 10/100/1000BASE-TX, 4 unpopulated gigabit SFP and 0/100/1000/1000BASE-T
<b>16202</b>	Summit X350-48t	48 10/100/1000BASE-TX, 4 unpopulated gigabit SFP and 0/100/1000/1000BASE-T

### Redundant Power Options

<b>10911</b>	EPS-500 External AC PSU	External Power System 500 Watts, with Cable
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### 1 Gig SFP+ Module Options

<b>10051</b>	SX mini-GBIC	Mini-GBIC SFP, 1000BASE-SX, MMF 220 & 550 meters, LC connector
<b>10052</b>	LX mini-GBIC	Mini-GBIC SFP, 1000BASE-LX, MMF 220 & 550 meters, SMF 10km, LC connector
<b>10053</b>	ZX mini-GBIC	Mini-GBIC SFP, 1000BASE-ZX, SMF 70km, LC connector
<b>10056</b>	1000BASE-BX-D BiDi SFP	1000BASE-BX-D SFP, 1490-nm TX/1310-nm RX wavelength
<b>10057</b>	1000BASE-BX-U BiDi SFP	1000BASE-BX-U SFP, 1310-nm TX/1490-nm RX wavelength
<b>10071</b>	SX SFP 10 Pack	SX-SFP 10 Pack
<b>10072</b>	LX SFP 10 Pack	LX-SFP 10 Pack

### 10 Gig XGM2 Module Options

<b>16115</b>	XGM2-2bt	Option card, Two 10GBASE-T ports
<b>16114</b>	XGM2-2sf	Option card, Two unpopulated 10 Gigabit SFP+ slots
<b>16112</b>	XGM2-2xf	Option Card, Two Unpopulated 10 Gigabit XFP Slots
<b>16113</b>	XGM2-2xn	Option Card, Two Unpopulated 10 Gigabit XENPAK Slots

### 10 Gig SFP+ Fiber Modules for XGM2-2SF

<b>10301</b>	SR SFP+ Module	10 Gigabit Ethernet SFP+ module, 850nm, MMF 26-300m link, LC connector
<b>10302</b>	LR SFP+ Module	10 Gigabit Ethernet SFP+ module, 1310nm, SMF 10km link, LC connector
<b>10304</b>	SFP+ Cable Assembly 1M	10 Gigabit Ethernet SFP+ passive cable assembly, 1m length
<b>10305</b>	SFP+ Cable Assembly 3M	10 Gigabit Ethernet SFP+ passive cable assembly, 3m length
<b>10306</b>	SFP+ Cable Assembly 5M	10 Gigabit Ethernet SFP+ passive cable assembly, 5m length
<b>10307</b>	SFP+ Cable Assembly 10M	10 Gigabit Ethernet SFP+ passive cable assembly, 10m length

### 10 Gig XFP+ Fiber Modules for XGM2-2XF

<b>10121</b>	SR XFP Module	10GBASE-SR XFP, LC Connector
<b>10122</b>	LR XFP Module	10GBASE-LR XFP, LC Connector
<b>10124</b>	ER XFP Module	10GBase-ER XFP 40km reach LC connector
<b>10125</b>	ZR XFP module	10 Gigabit Ethernet XFP module, 1550nm, SMF 80km, LC connector

### 10 Gig XENPAK Fiber Modules for XGM2-2XN

<b>10112</b>	ER XENPAK Module	10 Gigabit Ethernet XENPAK, 1550nm, SMF 40km, SC connector
<b>10111</b>	LR XENPAK Module	10 Gigabit Ethernet XENPAK, 1310nm, SMF 10km, SC connector
<b>10116E</b>	LW XENPAK Module	WAN PHY XENPAK, 10GBASE-LW, 1310nm, up to 10 KM over SMF, SC Connector, RoHS-5
<b>10114</b>	LX4 XENPAK Module	10 Gigabit Ethernet XENPAK, 1310nm WWDM, MMF 300m and SMF 10km, SC connector
<b>10110</b>	SR XENPAK Module	10 Gigabit Ethernet XENPAK, 850nm, MMF 300m, SC connector
<b>10113</b>	ZR XENPAK Module	10 Gigabit Ethernet XENPAK, 1550nm, SMF 80km, SC connector

## Summit X150 Series

### Summit X150 series 24 or 48-port 10/100 Fast Ethernet stand-alone switches

- Edge PoE and non-PoE switch providing basic 10/100BASE-T connectivity to the desktop in a network running ExtremeXOS® from the core to the edge
- Single streamlined operating system across the entire enterprise network
- ExtremeXOS provides scripting capability to automate network configuration
- LLDP/LLDP-MED to provide device management
- Comprehensive network management through consistent ExtremeXOS CLI, SNMP, Web-based management and XML interface
- Modular ExtremeXOS operating system • Ethernet Automatic Protection Switching (EAPS) resiliency protocol
- Quality of Service (QoS) with advanced traffic management capabilities for converged applications
- Redundant Power Supply to keep the network up even under power anomaly
- Multiple network edge authentication support with multiple endpoints per port
- Extensive MAC and IP security functionality to help prevent man-in-the-middle attacks
- Network intrusion detection and response



Summit X150 Series Family



15201



15203



EPS-160 and EPS-T



EPS-500



LR SFP+ Module

#### JENNE PART

NUMBER:	Name	Description
<b>15201</b>	Summit X150-24t	24-port 10/100BASE-TX
<b>15205</b>	Summit X150-24p	24-port 10/100BASE-TX with PoE (370 Watts)
<b>15203</b>	Summit X150e-48t	48-port 10/100BASE-TX
<b>Redundant Power Options</b>		
<b>10906</b>	EPS-T	External Power System tray, Accepts up to two EPS-160 power modules
<b>10907</b>	EPS-160	External Power System power module for EPS-T, 160 Watts, with cable
<b>10911</b>	EPS-500 External AC PSU	External Power System 500 Watts, with Cable
<b>1 Gig SFP+ Module Options</b>		
<b>10051</b>	SX mini-GBIC	Mini-GBIC SFP, 1000BASE-SX, MMF 220 and 550 meters, LC connector
<b>10052</b>	LX mini-GBIC	Mini-GBIC SFP, 1000BASE-LX, MMF 220 and 550 meters, SMF 10km, LC connector
<b>10053</b>	ZX mini-GBIC	Mini-GBIC SFP, 1000BASE-ZX, SMF 70km, LC connector
<b>10064</b>	LX100 SFP	1000BASE-LX100 SFP, Extra Long Distance SMF 100 km/30 dB Budget, LC Connector
<b>10056</b>	1000BASE-BX-D BiDi SFP	1000BASE-BX-D SFP, 1490-nm TX/1310-nm RX wavelength
<b>10057</b>	1000BASE-BX-U BiDi SFP	1000BASE-BX-U SFP, 1310-nm TX/1490-nm RX wavelength
<b>10058</b>	100BASE-BX SFP BX-D	100M SFP, 100BASE-BX-D, SMF (1550-nm TX/1310-nm RX wavelength), 100 Mbps bidirectional
<b>10059</b>	100BASE-BX SFP BX-U	100M SFP, 100BASE-BX-U, SMF (1310-nm TX/1550-nm RX wavelength), 100 Mbps bidirectional
<b>10066</b>	100BASE-LX10 SFP	100M SFP, 100LX10 SMF, (1310-nm 10km singlemode transmission) LC connector
<b>10067</b>	100BASE-FX SFP	100M SFP, 100FX MMF, (1310-nm, 2km multimode transmission) LC connector
<b>10071</b>	SX SFP 10 Pack	SX-SFP 10 Pack
<b>10072</b>	LX SFP 10 Pack	LX-SFP 10 Pack

## Summit X150e Redundant Power Supply Units (PSUs)

### EPS-160 and EPS-T

EPS-160 is the redundant AC Power Supply for lower power consuming AC PSU based summit switches. When installing it, EPS-T power tray is required to rack mount this external power supply. EPS-T power tray can take up to two EPS-160 power modules, and each EPS-160 works individually. EPS-160 comes with DC output cable to connect between Summit switch and EPS-160.



Front View

### EPS-500

EPS-500 is the redundant AC Power Supply for higher power consuming AC PSU based switches including Power-over-Ethernet enabled switches. EPS-500 is one rack unit height and works in standalone. EPS-500 can be rack mounted in a regular 19 inch rack system. EPS-500 comes with a DC output cable to connect between the Summit switch and EPS-500.



Front View



Rear view



# REACHNXT PORT EXTENDER

## ReachNXT 100-8t

### 8-port 10/100 Fast Ethernet Port Extender (Not a Stand-Alone Switch)

ReachNXT 100-8t extends the revolutionary ExtremeXOS core-class operating system from Extreme Networks® to the network access. ExtremeXOS is a highly resilient, modular operating system that helps provide continuous uptime, manageability and operational efficiency. ReachNXT 100-8t provides users with a consistent ExtremeXOS experience at an affordable price. It is best suited for network access applications where easy network deployment is required.

- Link Layer Discovery Protocol (LLDP) provides information for device management by the upstream switch
- Includes built-in firmware management
- By extending ExtremeXOS, ReachNXT 100-8t can provide the same level of user security over the network as the upstream ExtremeXOS switch
- Automated network login and authentication reduce operator efforts and errors
- ReachNXT 100-8t will operate only if connected to an upstream ExtremeXOS switch
- Kensington lock slot is built in to the ReachNXT 100-8t for added physical security
- The plug-and-play simplicity of ReachNXT 100-8t reduces network operations cost as no configuration is required
- ReachNXT 100-8t provides fiber-to-copper media conversion from its 1000BASE-X SFP port to eight of its 10/100BASE-T ports



ReachNXT 100-8T



ReachNXT



LR SFP+ Module

#### JENNE PART

##### NUMBER: Name

##### Description

**12101** ReachNXT R100-8t ReachNXT R100-8t 8x 10/100BASE-T ports, 1 Gigabit combo ports (1 unpopulated Gigabit SFP and 10/100/1000BASE-T, PoE input)

#### ReachNXT Accessories and Spares

**12102** AC Power Adapter ReachNXT R100-8t Optional AC power adapter with 3 attachable power pins/plugs; input: 100-240V ~ 50/60Hz, Max 0.5A; output: 12V ~ 1.25A

**12103** Mounting Kit ReachNXT R100-8t Mounting Kit

#### 1 Gig SFP+ Module Options

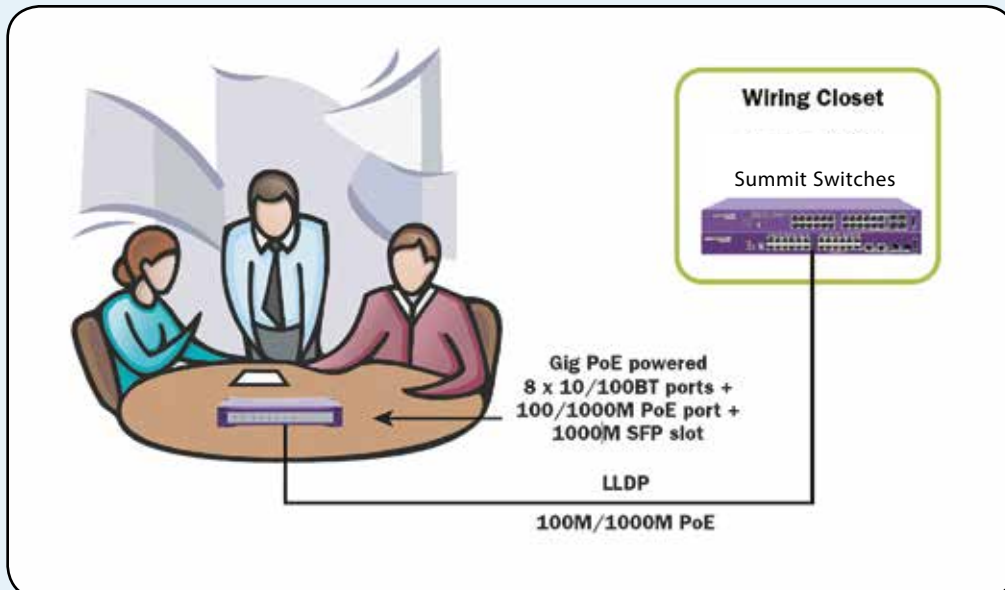
**10051** SX mini-GBIC Mini-GBIC SFP, 1000BASE-SX, MMF 220 and 550 meters, LC connector

**10052** LX mini-GBIC Mini-GBIC SFP, 1000BASE-LX, MMF 220 and 550 meters, SMF 10km, LC connector

**10056** 1000BASE-BX-D BiDi SFP 1000BASE-BX-D SFP, 1490-nm TX/1310-nm RX wavelength

**10057** 1000BASE-BX-U BiDi SFP 1000BASE-BX-U SFP, 1310-nm TX/1490-nm RX wavelength

## ReachNXT Conference Room Application Diagram



## Ridgeline Network and Service Management Software

Ridgeline™ is a scalable, full-featured network and service management tool that simplifies configuration, provisioning, troubleshooting and status monitoring of IP-based networks. Offering a comprehensive set of network management applications for the network and its elements, Ridgeline delivers network and service management while adding valuable and intuitive features that help save time by streamlining common tasks.

### Operational Simplicity

- Flexible and intuitive user interface
- Topology view with alarm integration
- Firmware and configuration management

### Carrier-Class Availability

- Intelligent alarm systems and real-time statistics
- Ethernet Automatic Protection Switching (EAPS) provisioning, monitoring and network configuration validation
- End-to-end network service provisioning, visualization and monitoring

### Secure Management and Communications

- Operator and administration control based on roles
- SNMPv3, SSH-2 and HTTPS protocol support
- Audit log
- Detailed event tracking of users in network, and reporting

### Service Extensibility

- Universal Port Manager for easier deployment of ExtremeXOS® Universal Port profiles
- Link Layer Discovery Protocol (LLDP)—protocol support

### Network Automation

- Job/Task management and scheduling
- Flexible scripts and macros to automate provisioning and monitoring



Ridgeline Network and Service Management Software

### Extensible Network and Service Management

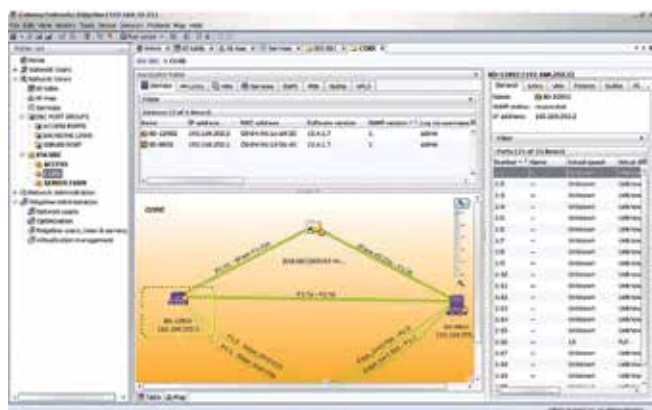
- Ridgeline InSite Software Development Kit (SDK)
- Secured North Bound Interface (NBI)

## Ridgeline Features

### EAPS Monitoring and Configuration Checker

Ridgeline enables the deployment of highly available-ring based architecture using Ethernet Automatic Protection Switching (EAPS) to support complex and demanding applications. Ridgeline provides provisioning tools for designing carrier-class network resiliency and availability for service providers and enterprise networks. Ridgeline meets the goals of operational simplicity and reliability by providing a flexible, intuitive, and point-and-click provisioning interface for network operators to easily create VLANs and resiliency domains.

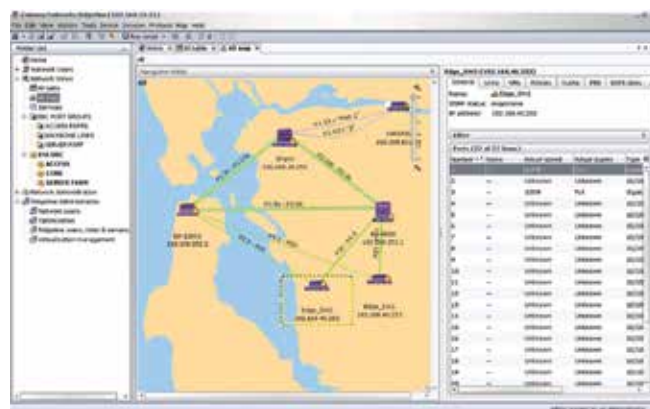
Ridgeline helps monitor EAPS rings graphically. The nodes in the rings, ring status and topology changes due to a ring failure are depicted in the graphic below..



EAPS Monitoring

### Intuitive Interface and Design

Simplicity begins with a detailed real-time view of the entire network. Ridgeline topology allows a user to view a network of Ridgeline managed devices and the links between devices as a set of maps. These maps can be organized into sets of submaps that allow a network to be represented as a hierarchical system of campuses, buildings, floors, closets or any logical groupings. Additional topology views can be created so that several different representations of a network are available for different purposes. The hierarchical views are fully customizable to effectively meet the business and network requirements of each organization.



Design Interface





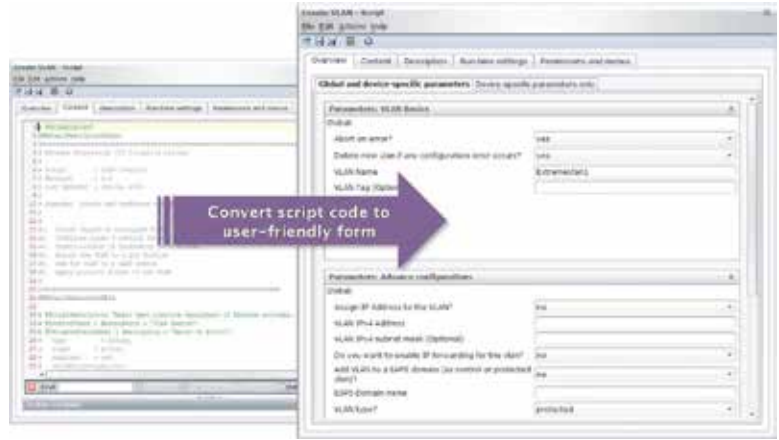
## Ridgeline Features

### Network Automation Scripts

The Ridgeline Script feature is a powerful scripting capability that allows the user to automate provisioning of network devices and services. It provides a comprehensive set of programming control structures that allows the user to create complex provisioning workflows. The Ridgeline administrator can assign access levels to control who is allowed to run and modify a script. To use a script, the user simply selects the desired script from the menu, enters the required parameters, and selects the list of devices to which the script applies. Configuration changes are recorded in an audit log.

### Scheduler

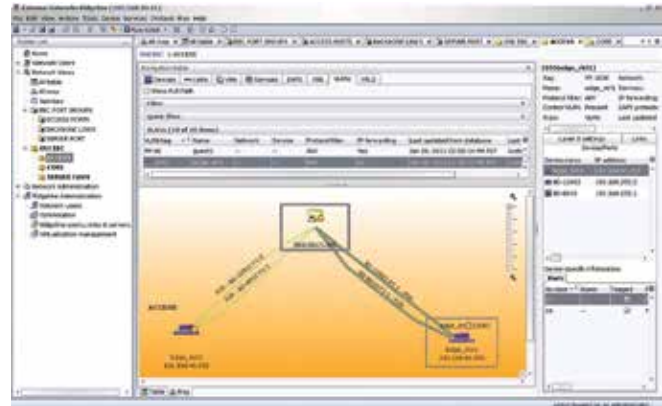
The Job/Task Scheduler can execute Ridgeline functions on specified devices at specified times. Ridgeline scripts can now be configured as script tasks which can run automatically at designated times.



Scripting

### Network Service Topology Visualization

As network configuration becomes more complex, the ability to visualize, monitor, and troubleshoot network services end-to-end is critical. Network services like VLAN, VLAN services, and vMAN can be viewed end-to-end via Ridgeline. For example, if a user selects a particular VLAN, the corresponding network devices and links are highlighted on the topology map. Alarm conditions like link failures can also be viewed at a network service level. Devices and links will dynamically change in color based on alarm condition. For network services like VLAN translation, Ridgeline provides the user an end-to-end view including the VLAN translations for the intermediary devices. Knowing how a VLAN is being translated, and the physical ports it's connected to, allows the user to trace and troubleshoot connectivity issues.

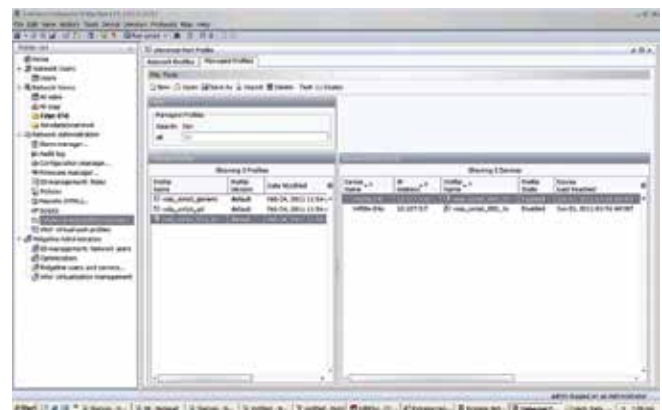


Network Service Topology

### Universal Port Manager

The Universal Port Manager feature for ExtremeXOS based switches simplifies network deployment of VoIP and dynamic security policies.

The Universal Port Manager feature in Ridgeline (Figure 5) helps define and distribute Universal Port profiles for ExtremeXOS based switches. The auto discovery feature in Universal Port Manager helps in centralized monitoring and management of network-wide profiles. It allows network managers to audit currently deployed profiles on port(s) and see how the deployed versions differ from the ones maintained in Ridgeline. It makes it easier for users to configure a triggering mechanism for a profile, based on a timer or predefined events. It allows users to deploy the profile to more than one port at the same time, making it an effective time saver. Universal Port Manager in Ridgeline makes it easy for users to start rolling out this powerful Plug-and-Play capability with prepackaged template profiles.



Universal Port Manager

JENNE PART NUMBER:	Name	Description
83015	Ridgeline 3.1 Base-50	Ridgeline 3.1 Base-50 is a comprehensive network and service management software for status monitoring, configuration and troubleshooting of up to 50 devices. Includes package plus license key. Software downloadable.
83016	Ridgeline 3.1 Add 50 Devices	Ridgeline 3.1 Add 50 Devices is a scalability upgrade to provide management capability to an additional 50 network devices. Requires Ridgeline 3.1 Base-50. Key only.
83017	Ridgeline 3.1 Add 250 Devices	Ridgeline 3.1 Add 250 Devices is a scalability upgrade to provide management capability to an additional 250 network devices. Requires Ridgeline 3.1 Base-50. Key only.
83018	Ridgeline 3.1 Up To 2000 Devices	Ridgeline 3.1 Up To 2000 Devices is a scalability upgrade to provide management capability to a maximum of 2000 network devices. Requires Ridgeline 3.1 Base-50. Key only.

## Altitude 4511

### Wallplate Access Point

The Altitude™ 4511 wallplate access point (AP) is an innovative mobility solution which provides powerful Wi-Fi for college campuses and Multiple Dwelling Units (MDUs) such as dormitories, apartment complexes, hotels and hospitals. Its modular design and innovative form factor eases installation, snapping into place in minutes instead of hours. Built on operational and architectural flexibility, the Altitude 4511 AP provides high-performance and powerful coverage as well as scalable deployment options that can lower costs

- Small, compact size
- Uses existing CAT 5 infrastructure
- Snaps easily onto existing wallplate
- High-power 26dBm antenna
- IEEE 802.11n technology
- Integrated controller

### Overview

Conventional access points designed to support MDUs require careful planning and often take time to deploy – involving the drilling of holes, pulling cables and installing mounting brackets. These APs are typically installed in hallways, with firewalls, concrete, rebar, mirrors, plumbing and bathroom tile contributing to attenuation factors that result in poor signal quality. Additionally, because these APs are functionally limited in terms of service and management scale, most often, IT personnel running smaller MDUs choose to install a few independent APs and use an RF switch to manage them. This results in management complexity and added costs. The Altitude 4511 wallplate access point has been designed specifically to address these challenges with the following unique set of features:

- Fast, snap-on installation using existing CAT 5/6 cabling and universal mounting bracket
- Snap-in keystone ports for service scale – providing connections for additional wired services such as VoIP phones and coaxial cable
- SMART RF dynamic channel and radio power adjustment which provides excellent radio performance
- Intelligent controller AP code that provides scalable centralized management of up to 25 Altitude 4511 access points without the need of a costly wireless controller
- 802.11 a/b/g/n 2x2 multiple-input and multiple-output (MIMO) custom-designed radio which provides 26 dBm performance

### Operational Flexibility for High Performance and Coverage

The Altitude 4511 access point comes with the native SMART RF technology that ensures top radio performance and coverage without operator intervention. A single Altitude 4511 AP utilizes the 802.11n MIMO technology and through its optimized design, can provide coverage of up to three to ten rooms from any CAT 5/6 wiring location. Seamless and automatic failover capabilities ensure high-quality user sessions, as the access points adjust their power to compensate for the loss of neighboring access points. The Altitude 4511 supports current 802.11a/b/g/n devices, providing secure user sessions through role-based access control, support for 802.1x on both wireless and wired ports, intrusion prevention and fast roaming.

### Scalable Deployment Options that Reduce Costs

The Altitude 4511 can operate as an intelligent controller, providing scalable and centralized management of up to 25 Altitude 4511 access points by utilizing the self-optimizing intelligent controller AP software. This allows IT managers to lower their costs by eliminating the need for a dedicated controller to manage the access points.

Additionally, each Altitude 4511 can be repurposed to operate as a Motorola® AirDefense® sensor for advanced spectrum analysis and connectivity troubleshooting in real time. This further reduces costs since it eliminates the need to place separate, dedicated sensors



Altitude 4511

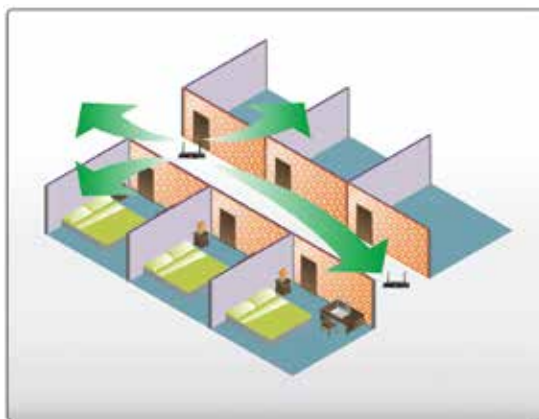


Figure 1: Traditional Wireless Access Point Placement in the Hallway

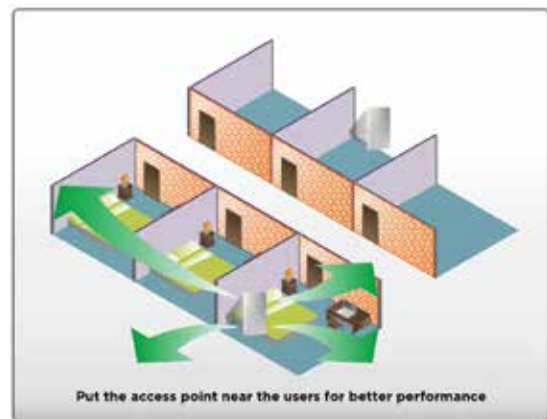


Figure 2: New Altitude 4511 Access Point Placement in the Room

JENNE PART NUMBER:	Description
<b>Altitude 4511 Access Point</b>	
<b>15761</b>	Altitude 4511 Single radio 802.11a/b/g/n Wallplate AP 2x2 MIMO. Low profile. One Ethernet PD uplink port, one FE LAN port included. US-only version supports FCC channel set.
<b>KT-6511-0000D-WR</b>	Optional Three-port Fast Ethernet Module for Altitude 451.

## Summit WM series wireless LAN controllers and Altitude™ AP

### High Performance Enterprise Wireless LAN Solution

- Fast and easy deployment
- High availability
- Comprehensive security network-wide
- Enterprise-grade voice performance
- Enterprise-grade 802.11n high speed wireless solution powered from standard Power over Ethernet (PoE)
- Campus-wide mobility
- Scalable to manage up to 200 Access Points (APs) per controller
- Unified wired/wireless service management with Ridgeline
- Unified wired/wireless security



Summit WM Series



WM3400



WM3411



WM3600



WM3700



#### JENNE PART

#### NUMBER: Name Description

#### Summit WM3400 Wireless Controllers

15717	WM3400 WLAN Controller	Summit WM3400 WLAN controller with 6 AP support. Includes IPSEC VPN/firewall/WIPS security, location engine and 3G failover.
15738	Rack Mount Kit	Rack mount kit for mounting Summit WM3400 controller and the power module to a 19" rack. Optional accessory.
15771	Summit WM3411	Summit WM3411 wireless controller and access point with dual, integrated, dual-band 802.11abgn radios.
15774	Antenna for WM3411	3x3 MiMo Facade Antenna for the Summit WM3411 Wireless Controller
15778	6AP Lic Upgrade WM3400 & 3411	6 Wireless AP license upgrade for the Summit WM3411 & WM3400
15779	Adv WIPS for WM3400 & 3411	Advanced WIPS upgrade for Summit WM3400 & WM3411
10051	SFP-SX Module	SFP-SX optical module for use with Summit WM3000 series controller.

#### Summit WM3600 Wireless Controllers

15714	WM3600 WLAN Controller	Summit WM3600 WLAN controller with 1x GE Cu/SFP Uplink port, 8x GE PoE ports, 1x FE Mgmt port, 1x USB 2.0 Host 1x ExpressCard™ Slot, 1x PCI-X, 1x Serial Port, 2 USB slots. Can manage up to 256 APs. Licenses sold separately. Power cord sold separately.
15715	16 AP Lic for WM3600	16 AP capacity license for Summit WM3600 controller.
15719	64 AP Lic for WM3600	64 AP capacity upgrade license for Summit WM3600 controller.
15716	RTLS Lic for WM3600	Real Time Location System (RTLS) feature upgrade license for Summit WM3600 controller. Enables the API for 3rd party RTLS applications.
15736	Adv Sec Lic for WM3600	Advanced Security feature upgrade license for Summit WM3600 controller. Enables Role Based Firewall Configuration and increases number of IPSEC VPN tunnels from 100 to 1024. Shipped as a voucher.
15734	3G Lic for WM3600	3G feature upgrade license for the Summit WM3600 controller. Enables the use of 3G as backup or primary WAN service for remote deployment. Requires subscription to 3G service and purchase of appropriate 3G card.
10051	SFP-SX Module	SFP-SX optical module for use with Summit WM3000 series controller.

#### Summit WM3700 Wireless Controllers

15710	WM3700 WLAN Controller	Summit WM3700 WLAN controller with 4xGE Cu/SFP ports, 1xFE management port, and 1x serial console port. Has 1 CF card slot, 2 USB slots. Can manage up to 1,024 Access Points. AP capacity and feature licenses sold separately. Power cord sold separately.
15711	16 AP Lic for WM3700	16 AP capacity license for Summit WM3700 controller.
15712	64 AP Lic for WM3700	64 AP capacity license for Summit WM3700 controller.
15718	256 AP Lic for WM3700	256 AP capacity license for Summit WM3700 controller.
15713	RTLS Lic for WM3700	Real Time Location System (RTLS) feature upgrade license for Summit WM3700 controller. Enables API for 3rd party RTLS applications.
15737	Adv Sec Lic for WM3700	Advanced security feature upgrade license for Summit WM3700 controller. Enables role-based firewall configuration and increases number of IPSEC VPN tunnels from 600 to 2048.
10051	SFP-SX Module	SFP-SX optical module for use with Summit WM3000 series controller.



Altitude 4750



Altitude 4610



Altitude 4620



AP4511

## JENNE PART

NUMBER: Name

Description

### Altitude Access Points

<b>15796</b>	Altitude 4763 outdoor	Altitude AP4763 tri-radio Independent Outdoor Access Point, 802.11a/b/g/n, 3x3 MIMO. External antennas. Powered by 802.3af/at PoE or by use of a PoE injector.
<b>15794</b>	Altitude 4762 outdoor	Altitude AP4762 dual-radio Independent Outdoor Access Point, 802.11a/b/g/n, 3x3 MIMO. External antennas. Powered by 802.3af/at PoE or by use of a PoE injector.
<b>15753</b>	Altitude 4750 abgn TriRadio	Altitude 4750 tri-radio 802.11 a/b/g/n indoor adaptive Access Point. Third radio functions as a sensor only. Includes an RJ45 console port and 2x GE data ports-GE1 is a PoE port, GE2 is an uplink/WAN port. Plenum rated. Antenna not included. Managed by Summit WM3000 series controllers. Powered by 802.3af/at PoE or by use of an optional external power supply or PoE injector.
<b>15751</b>	Altitude 4710 abgn DualRadio	Altitude 4710 dual-radio 802.11 a/b/g/n indoor adaptive Access Point. Includes an RJ45 console port and 2x GE data ports-GE1 is a PoE port, GE2 is an uplink/WAN port. Plenum rated. Antenna not included. Managed by Summit WM3000 series controllers. Powered by 802.3af/at PoE or by use of an optional external power supply or PoE injector.
<b>15757</b>	Altitude 4611 abgn IntAnt	Altitude 4611 single-radio 802.11 a/b/g/n indoor thin Access Point. Includes an internal omni-directional antenna and 1x 10/100/1000 PoE port. Managed by Summit WM3000 series controllers. Powered by 802.3af PoE or by use of an optional PoE injector.
<b>15758</b>	Altitude 4621 abgn ExtAnt	Altitude 4621 single-radio 802.11 a/b/g/n indoor thin Access Point. Includes 3x detachable external omni-directional paddle antennas and 1x 10/100/1000 PoE port. Plenum rated. Managed by WM3000 series controllers. Powered by 802.3af PoE or by use of an optional PoE injector.
<b>15724</b>	Altitude 4610 abgn AP	Altitude 4610 dual-radio 802.11a/b/g/n indoor Access Point with internal antennas. For US regulatory domain.
<b>15730</b>	Altitude 4620 abgn AP	Altitude 4620 dual-radio 802.11a/b/g/n indoor Access Point with external antennas. For US regulatory domain.
<b>15764</b>	AP4532i int ant	Altitude AP4532i internal antenna Access Point for indoors installations
<b>15767</b>	AP4532e ext ant	Altitude AP4532e external antenna Access Point for indoor installations
<b>15789</b>	AP4521i int ant	Altitude AP4521i single-radio Independent indoor Access Point, 802.11a/b/g/n, 2x2 MIMO, Includes internal omni-directional antennas, Powered by 802.3af/at PoE or by use of a PoE injector.
<b>15791</b>	AP4521e ext ant	Altitude AP4521e single-radio Independent indoor Access Point, 802.11a/b/g/n, 2x2 MIMO. External antennas not included. Powered by 802.3af/at PoE or by use of a PoE injector.
<b>15761</b>	AP4511 Wall Plate AP	Altitude AP4511 Single radio 802.11a/b/g/n Wall Plate Access Point. 2x2 MIMO. Low profile. One Fast Ethernet PoE uplink port, one Fast Ethernet LAN port included.
<b>15783</b>	AP4021i int ant	Altitude AP4021i single-radio thin (dependent) indoor Access Point, 802.11a/b/g/n, 2x2 MIMO, Includes internal omni-directional antennas. Powered by 802.3af/at PoE or by use of a PoE injector.
<b>15785</b>	AP4021e ext ant	Altitude AP4021i single-radio thin (dependent) indoor Access Point, 802.11a/b/g/n, 2x2 MIMO. Powered by 802.3af/at PoE or by use of a PoE injector.

## Product Comparison

Wireless Controllers	Summit WM3400/3411	Summit WM3600	Summit WM3700
<b>AP Capacity</b>	72 Thin or Adaptive APs	576 Thin/3,072 Adaptive APs	3,072 Thin/12,288 Adaptive APs
<b>Ports, Slots</b>	5 GE, PoE+ 1 GE WAN Port 1 USB port 1 RJ-45 serial port 1 PCIe slot	8 GE, PoE+ 1 GE WAN Port 1 USB port 1 FE management port 1 RJ-45 serial port 1 PCIe slot 1 PCI-X slot	4 GE 2 USB ports 1 FE management port 1 RJ-45 serial port 1 CF slot
<b>Options</b>	Advanced Security License RTLS API License 3G/4G License		





## EXTREMEWORKS® SERVICE OPTIONS

Extreme Networks' preventative maintenance helps to avoid future issues, while our Technical Assistance Center (TAC) team and eSupport website enables you to quickly research and resolve issues. ExtremeWorks Maintenance and Support provides you with the security of knowing that you have access to expertise and support when the unexpected occurs.

Our ExtremeWorks service solutions include all the critical elements to help make your network operation successful: technical assistance 24x7x365; software updates to provide the enhancements that your network may need; hardware replacement options for parts, where and when you need them; and eSupport, providing direct access to solutions, documentation, design guides, and online assistance and troubleshooting.

### ExtremeWorks Options

#### 24x7 Technical Assistance Center (TAC)

Access the technical assistance you need, when it matters most. We have established Technical Assistance Centers and professional service resources in the US, Europe, Asia, and Japan. Engaging our global Services and Support organization at a local level saves time and allows you to focus on your business, rather than your network.

Our trained and certified engineers can answer questions and help you with implementation and operational concerns. Take advantage of this expertise and knowledge—not just to solve problems, but also to gain information on converged networks and applications, security, performance, and wireless solutions.

#### Software Updates

Receive software updates to ExtremeWare® and ExtremeXOS™ consisting of major and minor releases, with solutions and enhancements within the feature set. Updates have addressed functionality relating to IPv6, VLANs, Virtual Routers, EAPS, LLDP, Multicast, and Power over Ethernet (PoE). Maximize your investments—continue to receive the updates you need to leverage the most out of your IT purchases.

#### Hardware Replacement

Choose from flexible ExtremeWorks support options to find the level of support you need to meet your business requirements. Need a replacement within four hours for your core network and data center, but want return-to-factory for the edge of your network? Require onsite assistance for remote locations where staffing is scarce? With ExtremeWorks, you have a variety of choices to create the service package that best matches your business needs.

#### eSupport

Obtain the latest documentation, troubleshooting guides, training materials, online ticketing, and updates. Extreme Networks leverages the power of the Internet to distribute and exchange information. In addition, a subscription to our newsletter enables you to stay current with helpful hints and techniques to optimize your network. Only an ExtremeWorks support contract gives you the ability to tap into this valuable information portal.

**Service Model + Summit Switch Model = Service Part #**

**Example:** Next Business Day (97004) on a X250e-24p would be 97004-x250e-24p



### 97000

#### Software and TAC

- Extreme Networks will provide 24x7x365 access to TAC and eSupport
- No hardware entitlement is included with this service level

### 97004

#### Next Business Day (NBD) AHR

- Extreme Networks will provide 24x7x365 access to TAC and eSupport
- If notice of the defective product is received prior to 2 p.m. regional TAC time, Extreme Networks will ship a replacement of like or equivalent model on the same day with next business day delivery

### 97007

#### 4 Hour AHR

- Extreme Networks will provide 24x7x365 access to TAC and eSupport
- Extreme Networks will provide a replacement of like or equivalent model within 4 hours (on a 24x7x365 basis) from the time that Extreme Networks determines that Product replacement is required, the Return Materials Authorization (RMA) is approved and the service provider has been notified

### 97001

#### Extended Warranty

- Extreme Networks will provide 24x7x365 access to TAC and eSupport
- Extreme Networks will ship a replacement of like or equivalent model 10 business days after receipt of the defective unit

### 97011

#### NBD Onsite

- Extreme Networks will provide 24x7x365 access to TAC and eSupport
- If notice of the defective product is received prior to 2 p.m. regional TAC time, Extreme Networks will provide a replacement of like or equivalent model plus an engineer on the next business day (Monday-Friday, 8 a.m. to 5 p.m.)

### 97008

#### 4 Hour Onsite

- Extreme Networks will provide 24x7x365 access to TAC and eSupport
- Extreme Networks will provide a replacement of like or equivalent model plus an engineer within 4 hours (on a 24x7x365 basis) from the time that Extreme Networks determines that Product replacement is required, the RMA is approved and the service provider has been notified